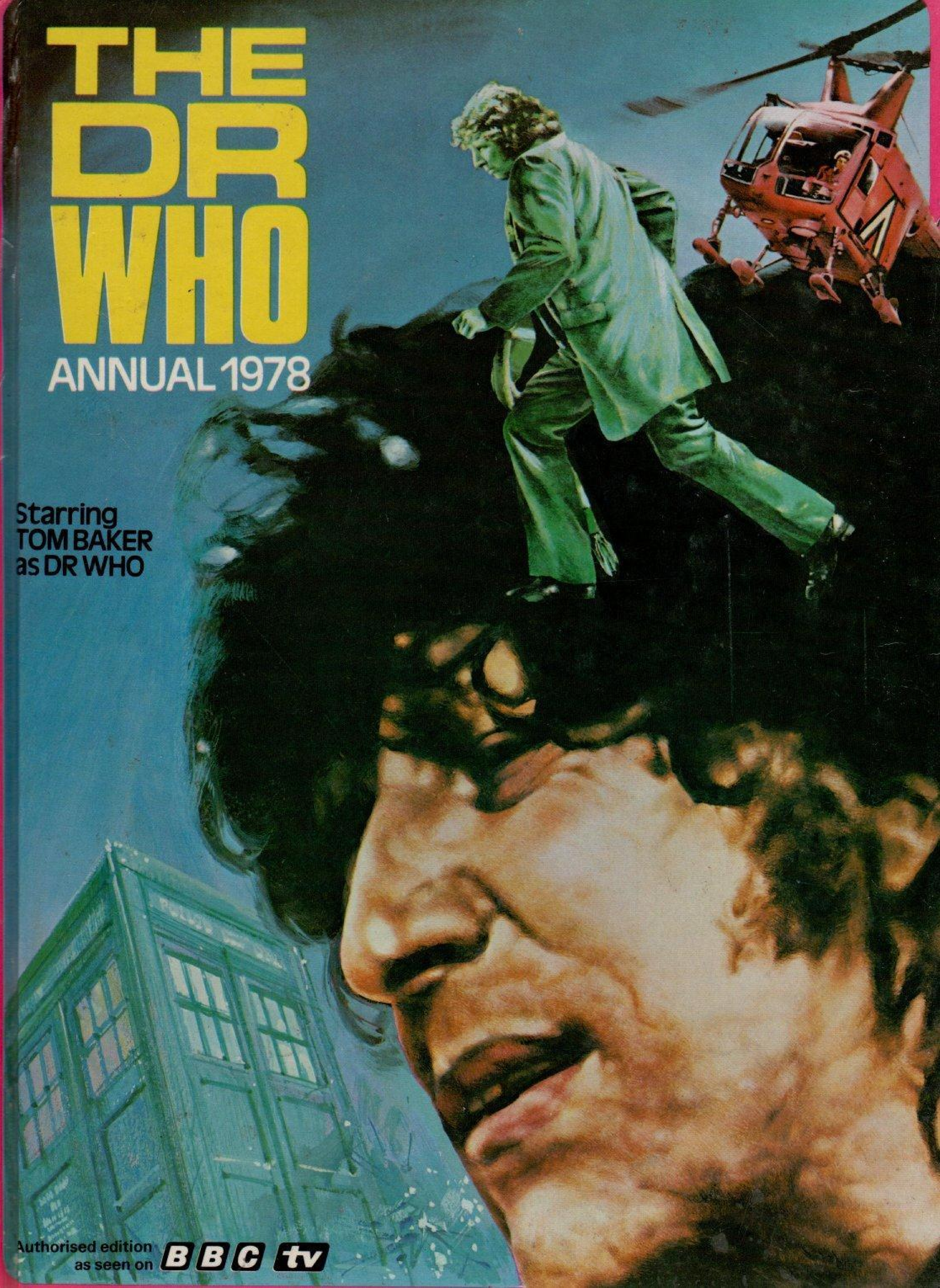
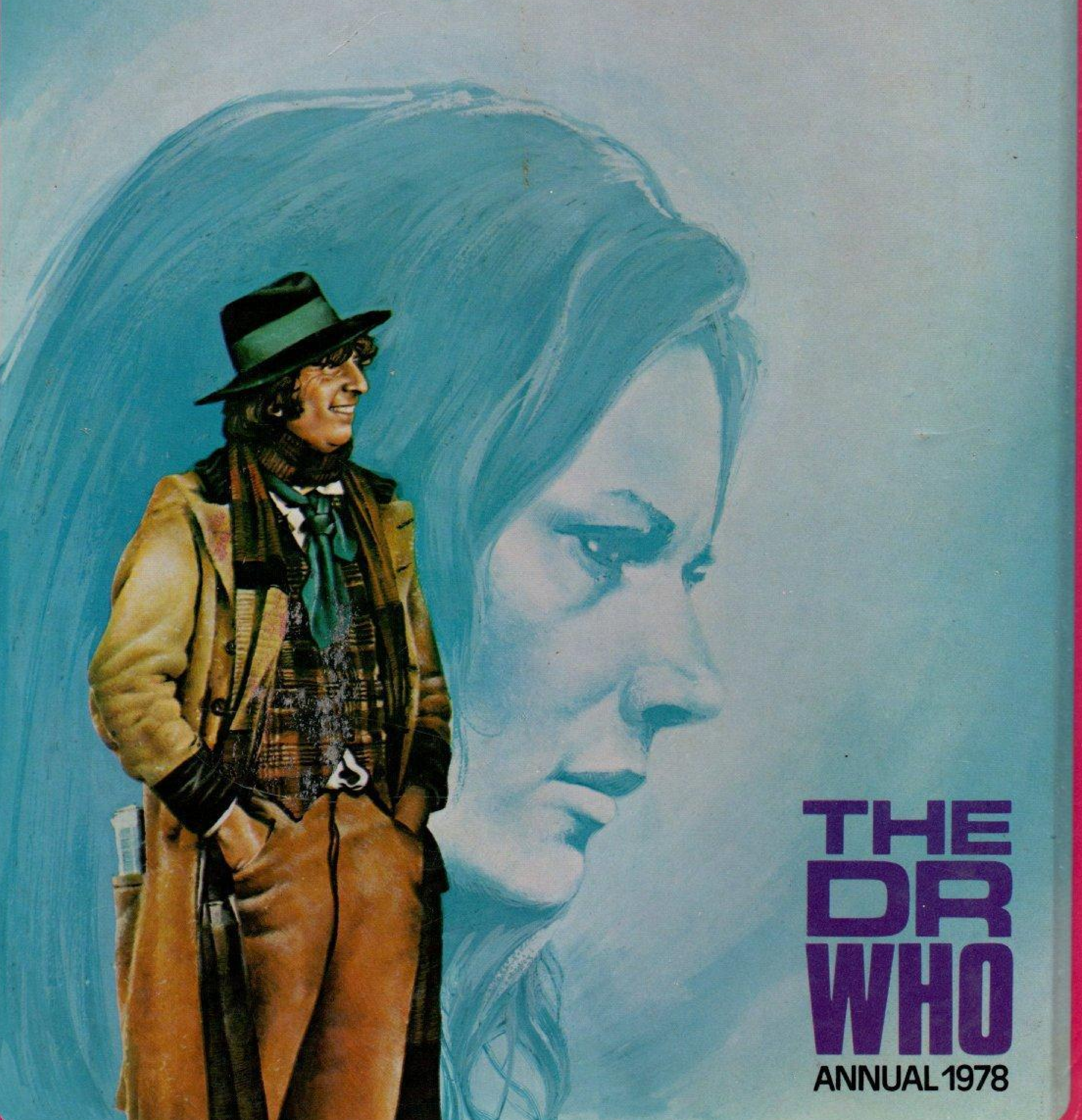
THE DR WHO
ANNUAL 1978



Starring
TOM BAKER
as DR WHO

Authorised edition
as seen on BBC tv

SBN 7235 0412 1



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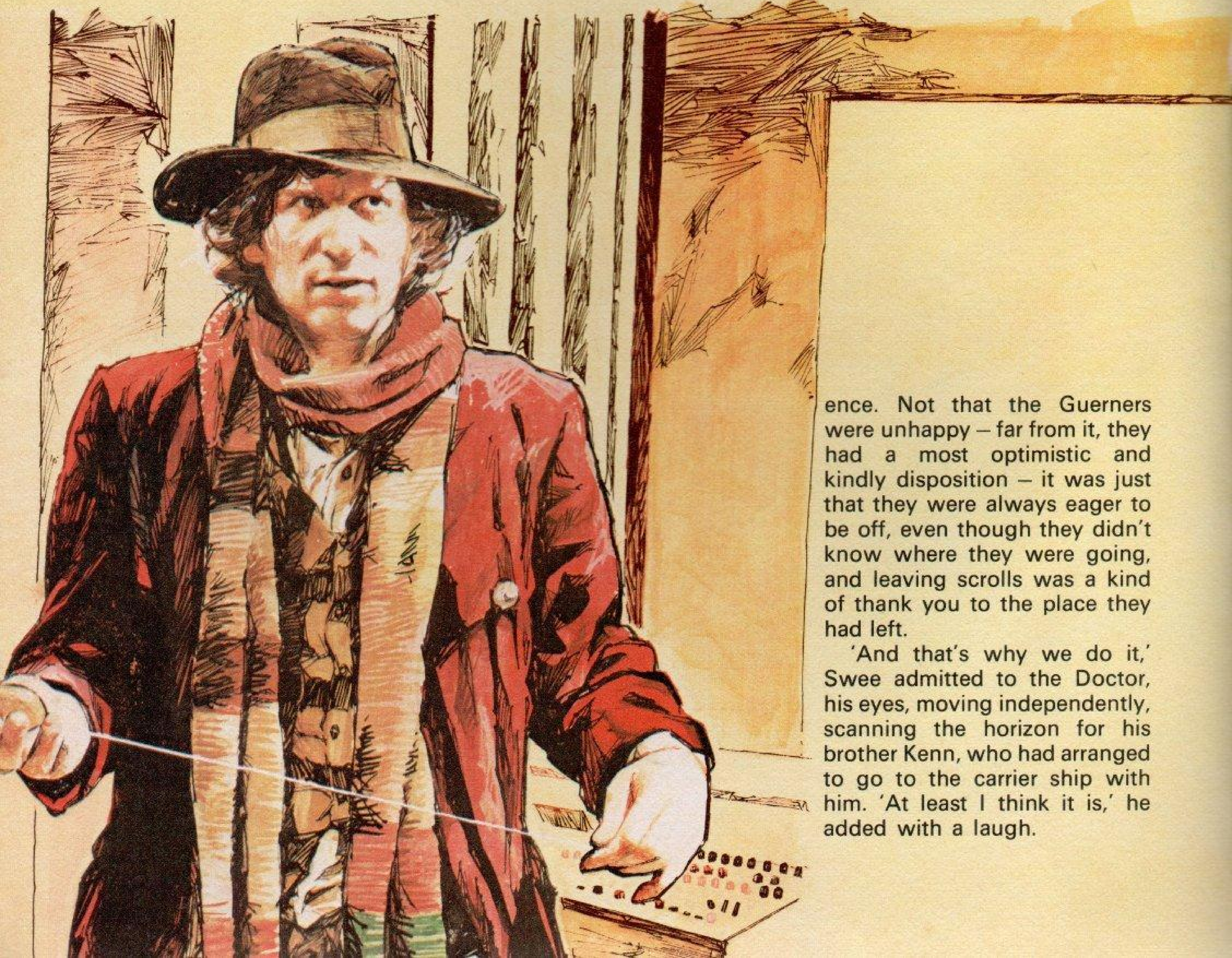
The Sleeping Beast

The Doctor listened to the hum of the Tardis dying down, and in the absolute silence that followed, he let his mind drift back to the last time he had seen Swee.

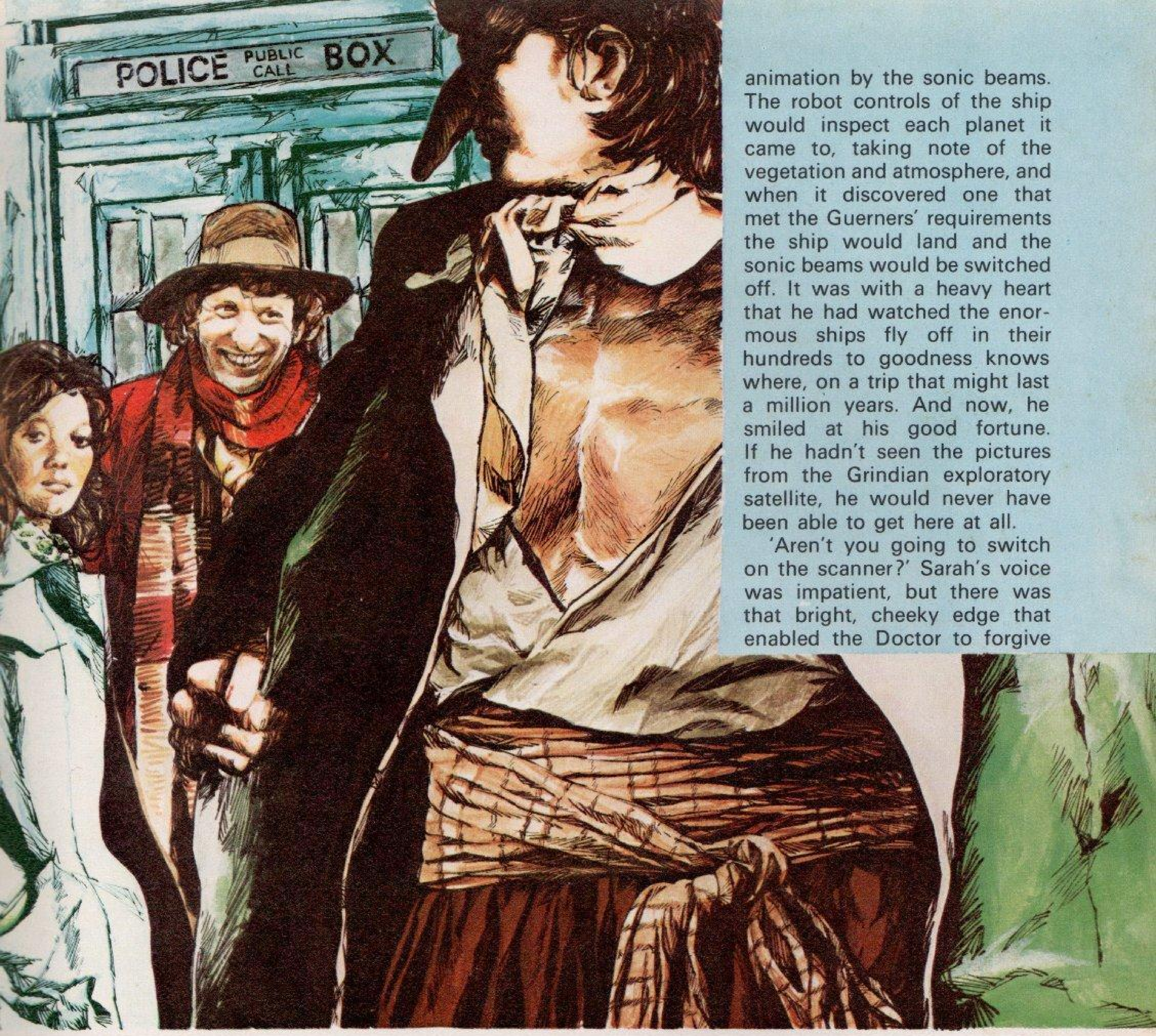
The Doctor had often thought back to that first meeting with Swee, a lively, likeable Guerner, with the disconcerting habit of twirling his eyes and stretching his flexible neck whenever he got excited. Like all Guerners, he stood about four feet six, had large feet, a tortoise-like shell and a long pointed nose and, like all Guerners at that time, he had plenty to be excited about. After all, it wasn't every week that a whole planet just upped and left for a new galaxy.

They had expected the decision for some time. For years they had been building new carrier ships and renovating the old ones that had brought them there all those years ago. For the Guerners were nomads, moving from planet to planet like a wandering tribe, settling for some centuries and then moving on. As Swee had explained to the Doctor at the time, this was not through choice. The Guerners, unfortunately, had tremendous appetites. A single Guerner could eat an acre of Amazonian jungle into a dusty patch in little more than a day. They were vegetarians, but they were as ravenously hungry as a pack of Zimmerian wolves. Add to that the fact that they were extremely poor farmers, and the reason for their nomadic habits becomes clear. A fair sized planet, say fifty times the size of earth, could not hope to sustain more than three generations of Guerners.

And so, when the Doctor first met Swee on the planet of Rimba, there was an air of expectancy everywhere. Swee was busy burying his scroll on the site of his last house there, detailing his stay for whoever might find it. This was a bizarre habit, practised by all Guerners, that the Doctor suspected had something to do with the insecurity of their rootless existence. Not that the Guerners were unhappy – far from it, they had a most optimistic and kindly disposition – it was just that they were always eager to be off, even though they didn't know where they were going, and leaving scrolls was a kind of thank you to the place they had left.



'And that's why we do it,' Swee admitted to the Doctor, his eyes, moving independently, scanning the horizon for his brother Kenn, who had arranged to go to the carrier ship with him. 'At least I think it is,' he added with a laugh.



'Yes, of course, most sensible,' agreed the Doctor, smiling at his young friend. The Doctor then had not been as he is now. He'd had checked trousers and a flute and straight brown hair cut in a fringe. He'd changed twice since then.

But in those days he had the same roving spirit, the same insatiable quest for knowledge, and that was why he'd ended up on Rimba. He'd been trapped in a cosmic whirlpool by the deadly stinging butterflies of Phlok, and his only means of escape was to jaunt through space and time without plotting a course. In this instance the Tardis had emerged from inter-dimensional non-space into the comforting planetary environment of Rimba.

The Doctor had stayed for two weeks, helping all the Guerners find their berths on the massive carrier ships and joining in the parties that went on almost continuously at such times, and his memories of that stay were among his happiest. When, finally, the time for the Guerners to leave came, he stood and watched sadly as they lay down in their berths and were placed into suspended animation by the sonic beams. The robot controls of the ship would inspect each planet it came to, taking note of the vegetation and atmosphere, and when it discovered one that met the Guerners' requirements the ship would land and the sonic beams would be switched off. It was with a heavy heart that he had watched the enormous ships fly off in their hundreds to goodness knows where, on a trip that might last a million years. And now, he smiled at his good fortune. If he hadn't seen the pictures from the Grindian exploratory satellite, he would never have been able to get here at all.

'Aren't you going to switch on the scanner?' Sarah's voice was impatient, but there was that bright, cheeky edge that enabled the Doctor to forgive her lack of manners. He cast her *his* idea of a reproving glance and dropped the switch. The scanner hummed into life and a picture of what was outside filled the screen.

'Good grief!' said the Doctor, starting. 'That's Swee!'

And it was, eyes twirling, neck stretching, and hands flapping like a chicken. Swee was running about around the ship giving orders to fellow Guerners around him. It was not Swee's agitation that shocked the Doctor however, it was the fact that all the Guerners were carrying weapons, and the place that they had materialised inside looked like the old mission control building at Houston on earth. The Doctor decided to go out and find out what was going on. He set the door mechanism into motion.

'Swee, it's so good to see you again.' He extended his arm and blinked seven times, the traditional Guernerian gesture of friendship.

'Seize them!' Swee's voice was stern.

'But, Swee, don't you remember me?'

'My name is not Swee. It is Nass! We know why you've come here!'

'But– but–'

It was useless. Although the creature in front of him was most definitely Swee – the Doctor could tell from the shell pattern that was as distinctive as a human fingerprint – it was not the Swee that the Doctor had known on Rimba. Nor did the other Guerners bear any psychological resemblance to the happy-go-lucky race of Nomads that had made him so welcome. The Doctor decided to go along with them until he could find out more about the change they had obviously undergone.

Swee's guards led them to a corner of the vast room they were in and stood in a tight semi-circle round them. Their eyes were still and their necks were rigid. When the Doctor saw that they were in no immediate danger he gave Sarah a reassuring smile and weighed up the possibilities in his mind.

Swee hadn't recognised him. Perhaps he was pretending not to recognise him for some reason that would be later revealed. No, that was unlikely, and there had been no flicker of recognition in the normally expressive Guernerian eyes. Maybe it was just that Swee didn't recognise him as he was now, for his appearance was vastly different to what he had been like then. But then again, Swee would have recognised the Tardis – that hadn't changed at all. He tried a new line of thought.

Maybe Swee had never seen him before. Maybe when he had jaunted through space and time from Phlok he had landed in a time ahead of this one. Maybe his first meeting with Swee was yet to happen. He quickly checked the figures in his mind. No, the first meeting with Swee took place some twenty-three thousand years before, of that there was no doubt. So what could it be?

The Doctor looked around the vast hall, and it was some seconds before he realised that he wasn't in a hall at all, but in the control room of one of the huge carrier ships he had waved off on their journey here. Why hadn't they disembarked? What was keeping them here?

'Sto-cat attack!' The words came from one of the Guerners manning a radar set. There were hundreds like him in a line, each studying similar instruments. Although they had not mastered the art of visual transmissions, the Guerners had a very sophisticated radar system, capable of locating a beetle in a haystack.

Swee rushed over to the first screen.

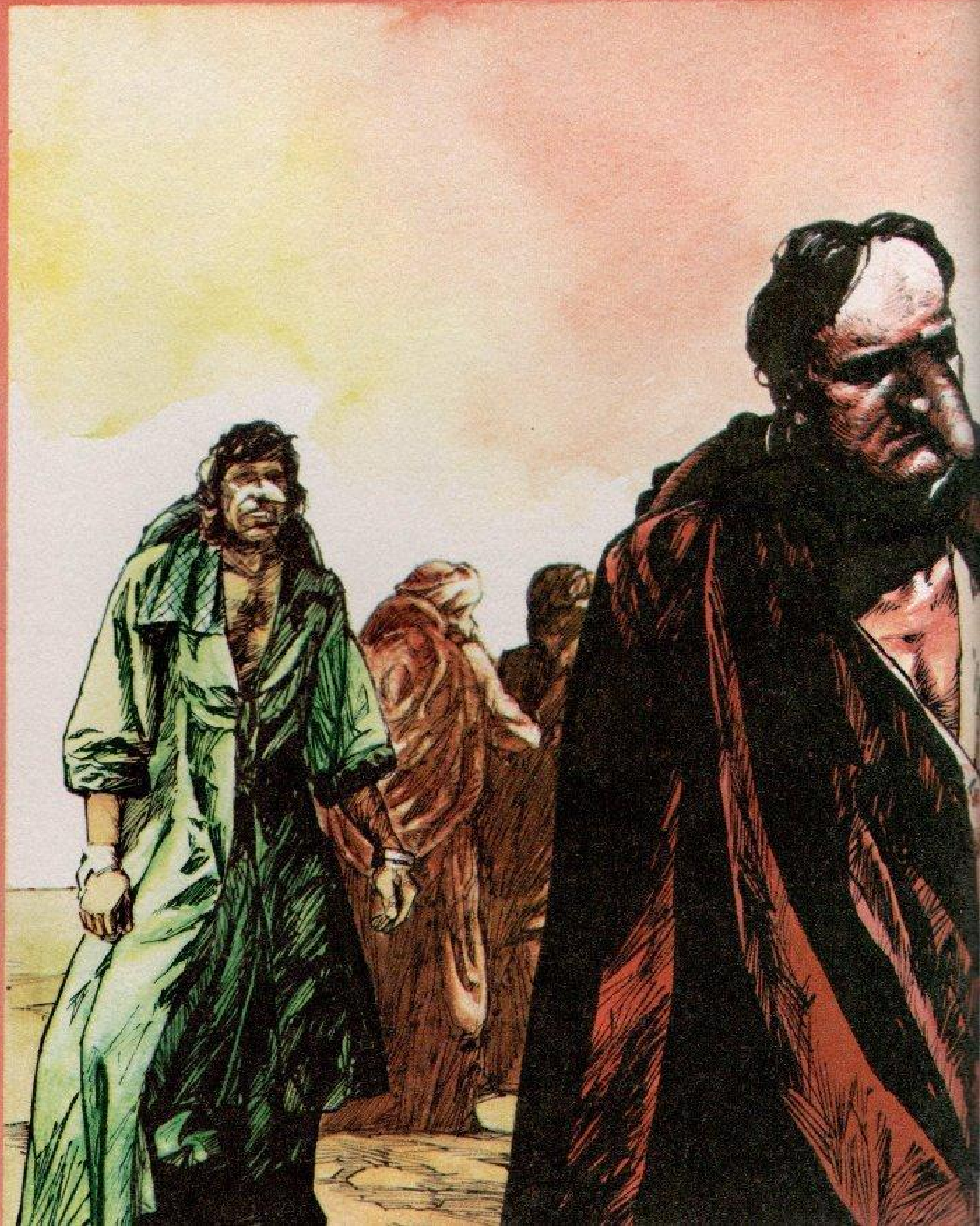
'He's attacking ship seventeen!'

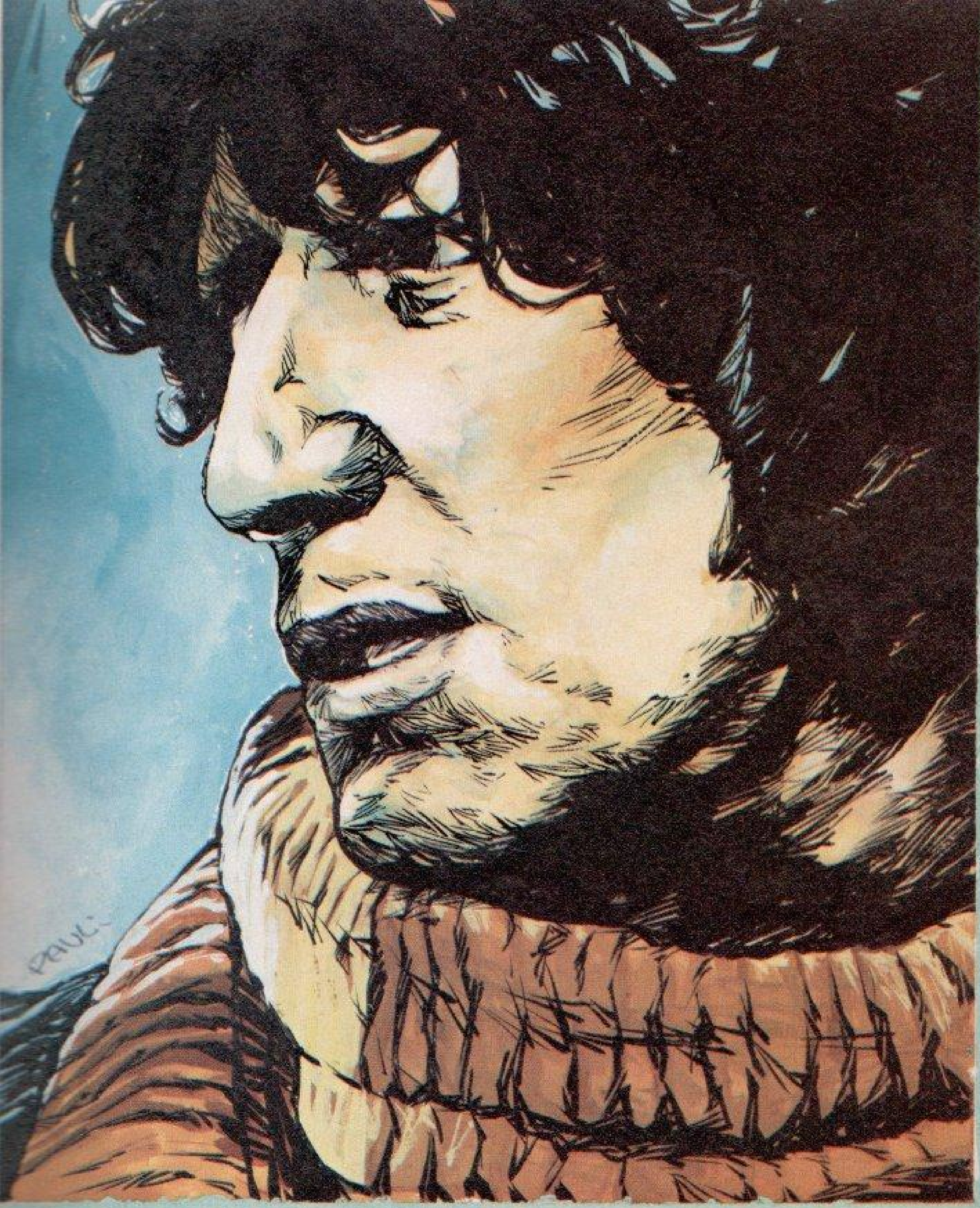
'Yes, poor devils.'

Swee rounded on the Doctor. 'So you've come to check his progress, have you? Well, let me tell you he's doing very nicely indeed. He has wrecked two of our ships already, and now he's after another.'

'Who has?'

'The Sto-cat. The huge robot





you control!'

'I assure you I know nothing of such a thing.'

'Nothing? I doubt it. Listen to this.' Swee turned up one of the dials on a radar screen near him. 'Our electro-voc will translate his gruntings into a word pattern intelligible to you.' Suddenly a halting, pitiless, metallic voice came out of the speaker, backed up by the sound of rending metal.

'Ha! Another one destroyed! Another victory for the mighty Kryptolian race. One more step on our glory trail across the universe!' There was a pause, and then the voice went on. 'You, inside the ships, you who are still alive – be ready to serve us! Be ready to work for us if you want to live! We are the masters! Now, at last, my comrades have come to activate me! We shall conquer the whole of the cosmos!'

Swee switched off the machine. He walked up to the Doctor like a lawyer who had just proved his case.

'And you still say you know nothing of the Sto-cat? You still say you are not the one who activated the robot?'

'I do indeed.' The Doctor's calm manner seemed to be softening Swee's aggressive attitude.

'But there's nobody else!' he cried despairingly. 'Our scanners have probed the whole planet! There's nobody else on it but us, that – THING, and you.' He looked at the Doctor with the hint of a plea in his eyes. The Doctor remained cool, trying to inspire a little trust and confidence.

'Tell me everything you know about the Sto-cat,' he asked.

'Well, it's a very large, four-legged robot that appears to be made of a kind of stone. How it moves I don't know, but it keeps attacking our ships.'

'And you're sure it's alone?'

'Positive. Our scanners are extremely accurate.'

'And how long has this been going on?'

Swee seemed flustered.

'How long? Why . . . why . . . for ever!'

The Doctor stared hard into Swee's eyes. They showed nothing but bewilderment. Finally the Doctor spoke, confidentially, but with considerable authority.

'I believe I can help you, but you must agree to what I say. If you do, you should be able to live here in peace. But it is imperative that you trust me.'

Swee was uncertain.

'What do you plan to do?'

'Could you rig up the electro-voc so the Sto-cat can hear me?'

'Of course.'

'Then do it.'

Swee worked the controls of the electro-voc and then motioned for the Doctor to stand in front of a grille that had a fan-like instrument whirring inside it.

'Speak!' he said.

The Doctor took a deep breath and began. 'You! You out there! Can you hear me?'

No answer.

'I say, you! Listen to me!'

'What . . . is it you want?' The metallic voice was without emotion.

'You say your friends have come to activate you?'

'Yes. At this moment they are activating thousands of millions of robots similar to me. Each one of us was placed on a life-support capability planet, waiting for that moment one million Brelian years later when they would come and activate us so that we may subjugate the planet and exploit whatever life has developed in that time.'

'You were activated by a short radio-active blast from short range?'

'Of course. It is the safest way.'

'Then where are your companions? Where are the ones who came to activate you? If you have any scanners, scour the planet. Where are they?'

There was a long pause, during which Swee held his breath and Sarah crossed her fingers as she gazed bemusedly at the Doctor. Finally, the voice returned and Swee exhaled with a high-pitched hissing sound.

'There must be some mistake . . .' said the voice.

'There is no mistake,' said the Doctor. 'You were activated by accident when these rocket ships landed next to you. Their nuclear motors were sufficient to set you off. You must deactivate. You are acting independently. Check your clocks!'

There was another silence.

The Doctor continued. 'You are spoiling the plans of your creators. You are jeopardising their mission. You must deactivate. You must! Logic demands it!'

There was a quiet click. The radar scanners showed no movement in the Sto-cat.

'You've done it!' said Swee. 'Well done!'

The Doctor wiped his brow before turning to him.

'And now you must keep your part of the bargain,' he said. 'You must all return to your berths and lie there. Nothing will happen to harm you.'

Swee discussed it with the leaders of the other ships and they agreed. The Guerners lay down in their berths and the Doctor activated the sonic beams to place them in suspended animation. He then set the robot controls so that the ships would journey once round the moon and return again.

'What are you doing?' asked Sarah.

'I'm doing the Guerners a favour,' he answered. 'As far as I can understand it, whenever they make a journey through space while under suspended animation, all memory of their previous life leaves them. When their ships land and they awaken, they immediately adopt the role best fitted for their survival. If everything is to their liking they are friendly and optimistic. If they wake up to find themselves under attack, as they did here, they can be very nasty indeed. After a short trip round the moon they should find this planet right up their street, especially as that robot has switched itself off.'

'Oh, yes, the robot. I'd almost forgotten about it. Let's go and have a look.'

They walked to the door of the planet and looked down. There, lying like a cat on a wall, was a huge stone lion with a humanoid head. Sarah gasped.

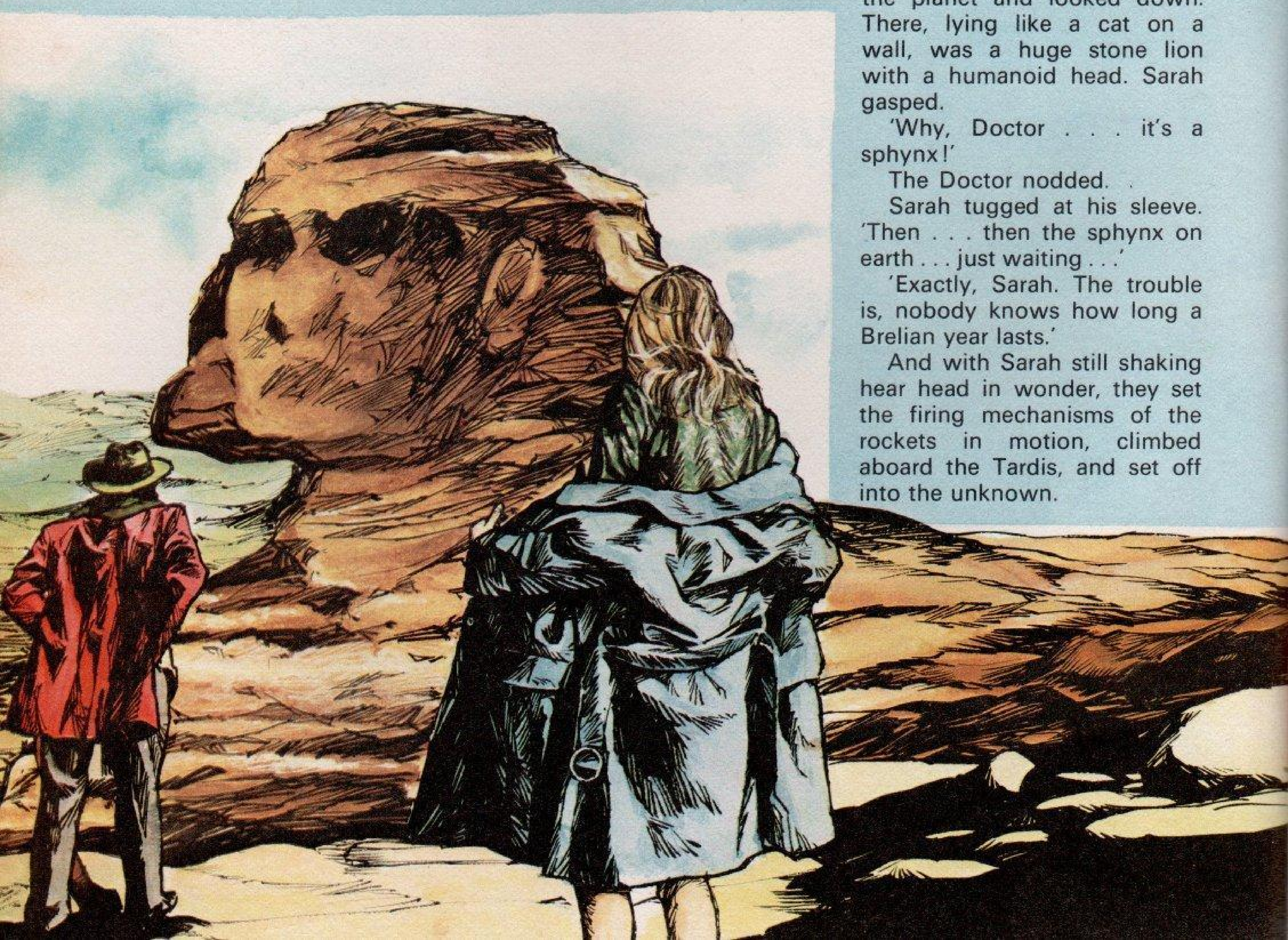
'Why, Doctor . . . it's a sphynx!'

The Doctor nodded.

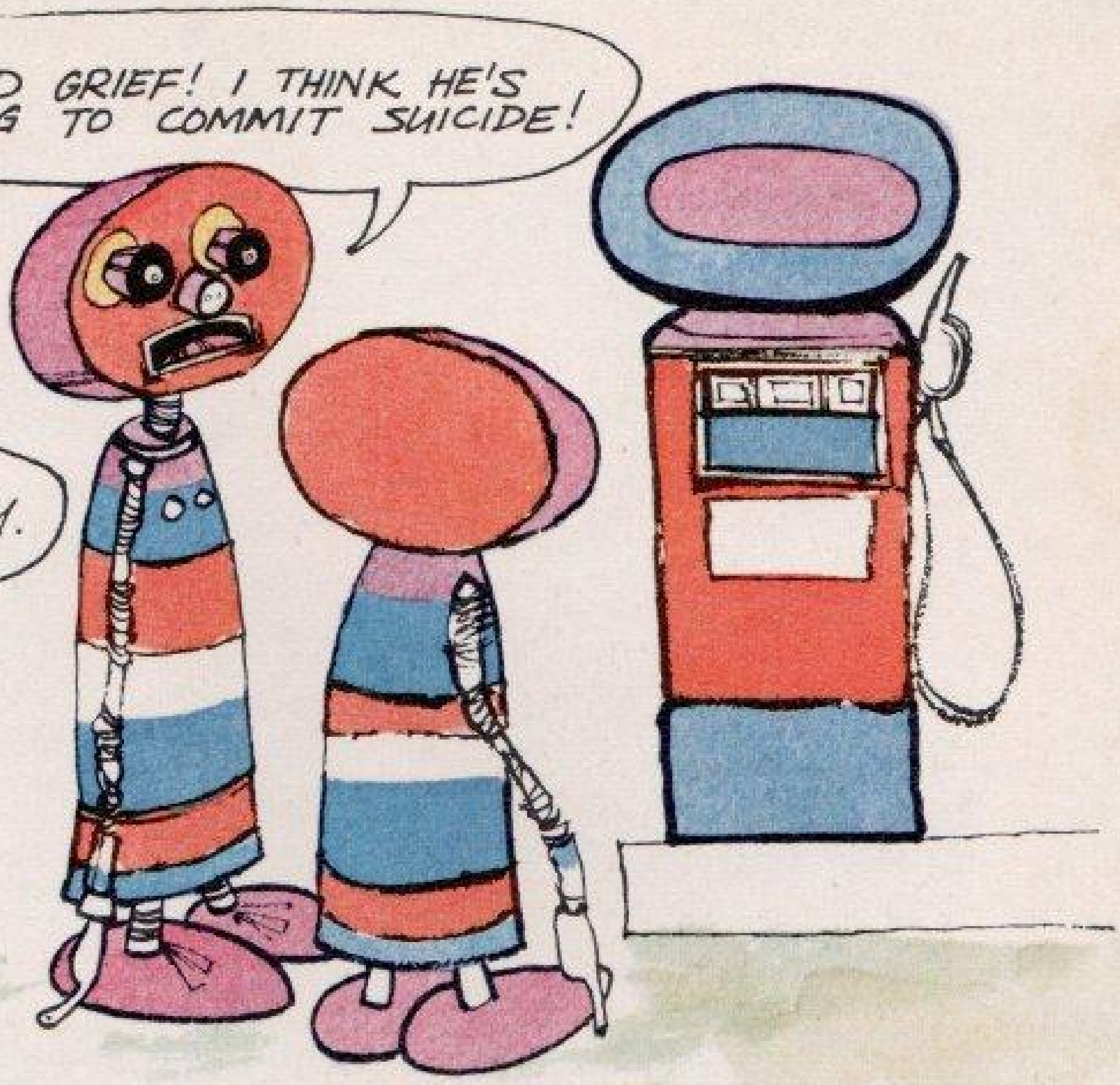
Sarah tugged at his sleeve. 'Then . . . then the sphynx on earth . . . just waiting . . .'

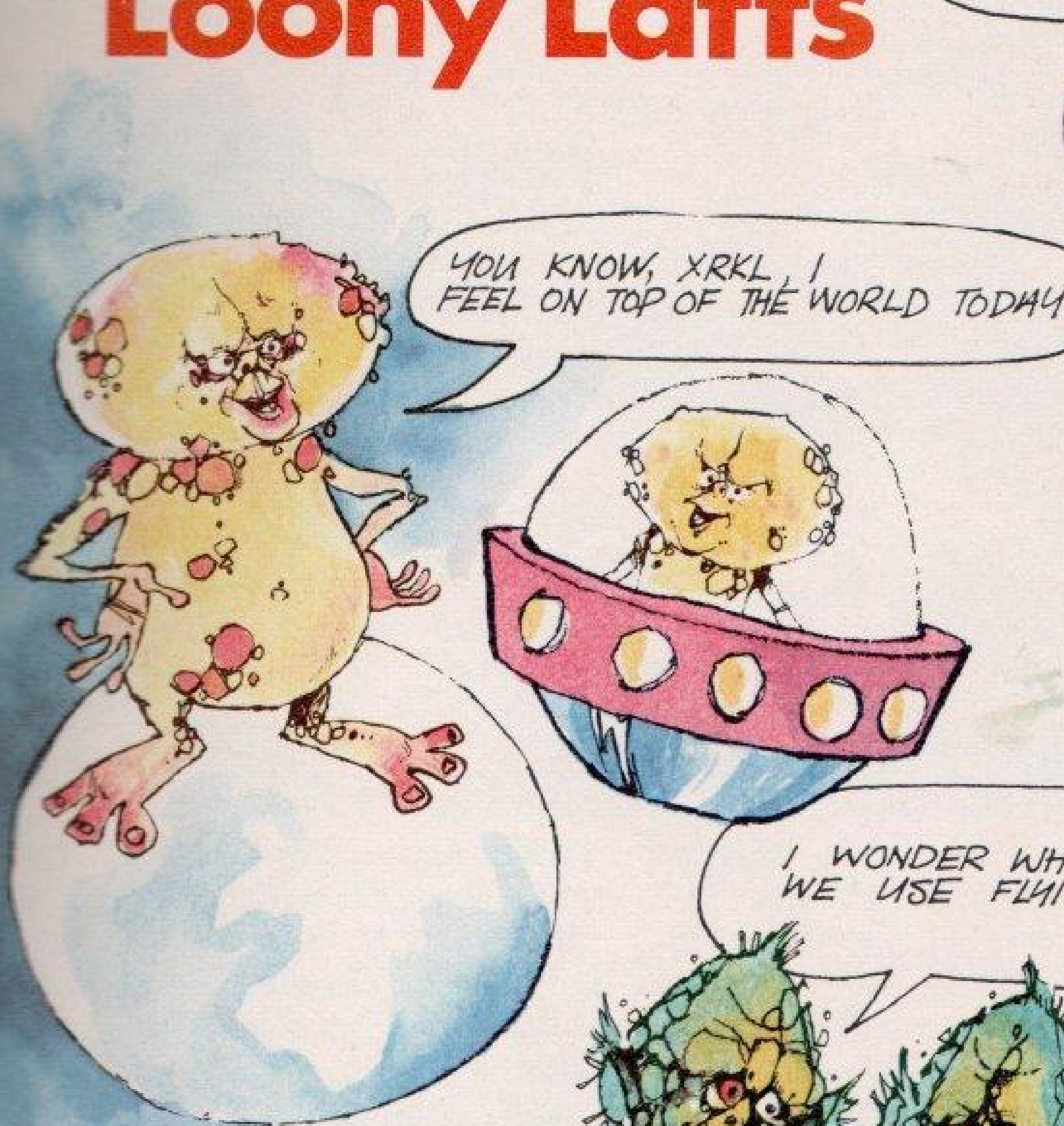
'Exactly, Sarah. The trouble is, nobody knows how long a Brelian year lasts.'

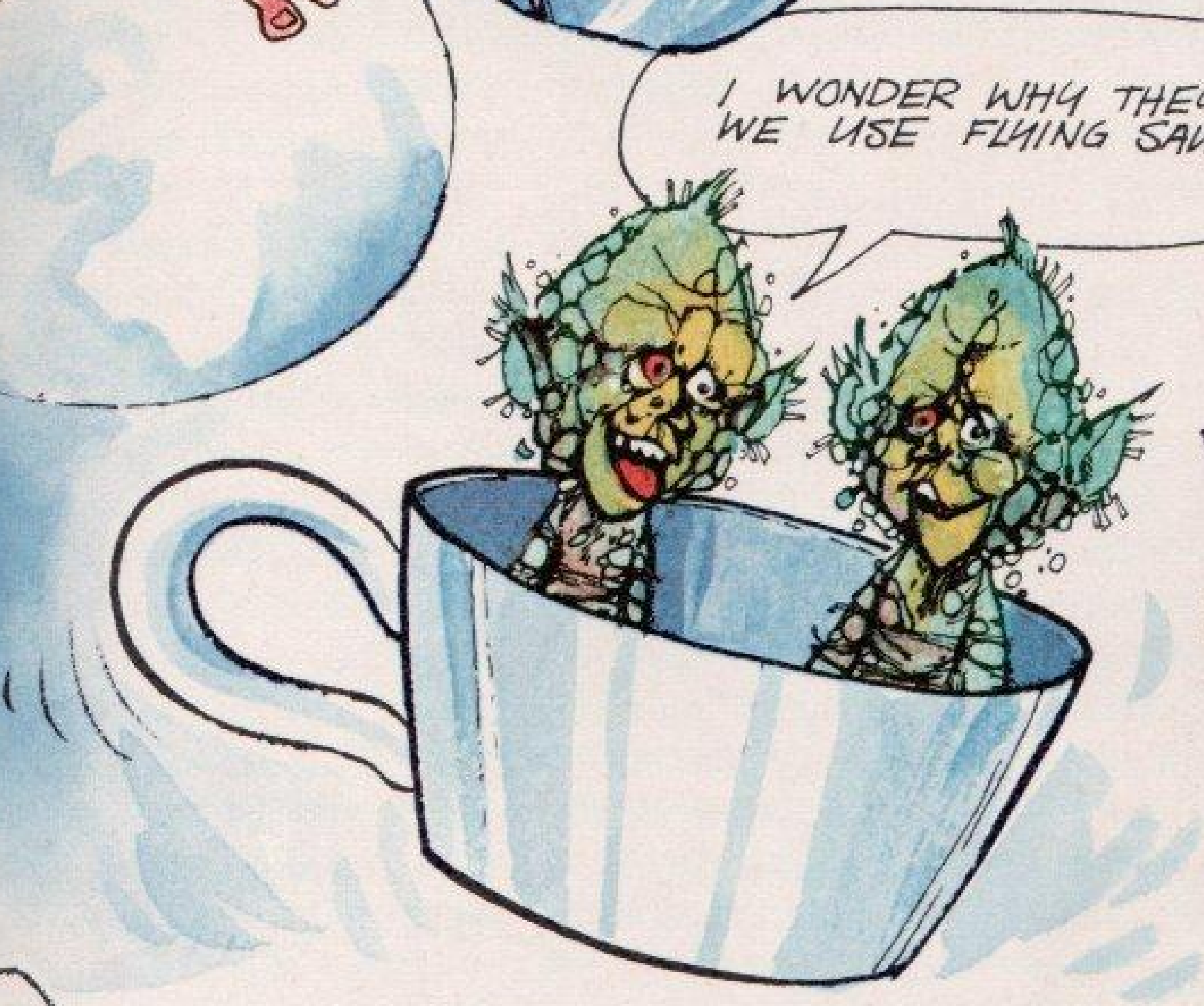
And with Sarah still shaking hear head in wonder, they set the firing mechanisms of the rockets in motion, climbed aboard the Tardis, and set off into the unknown.

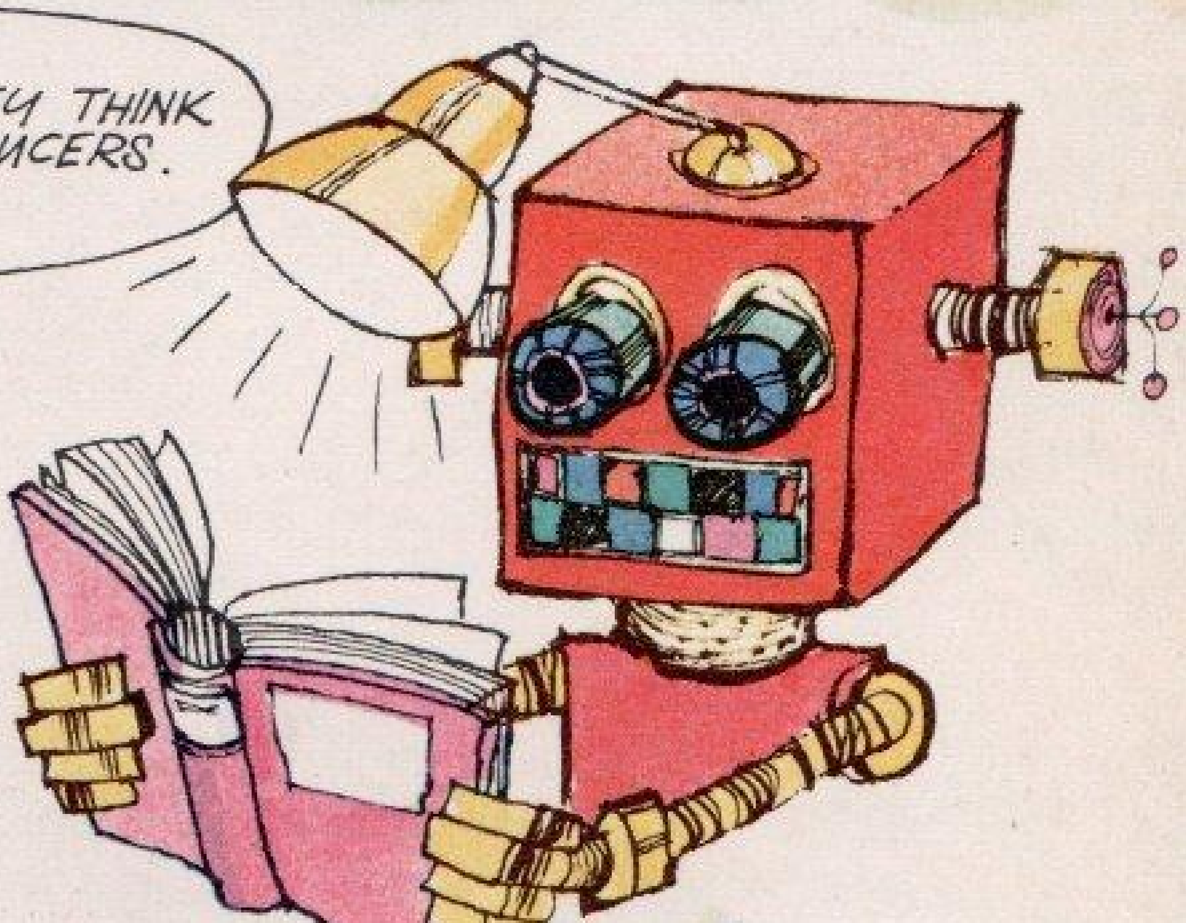


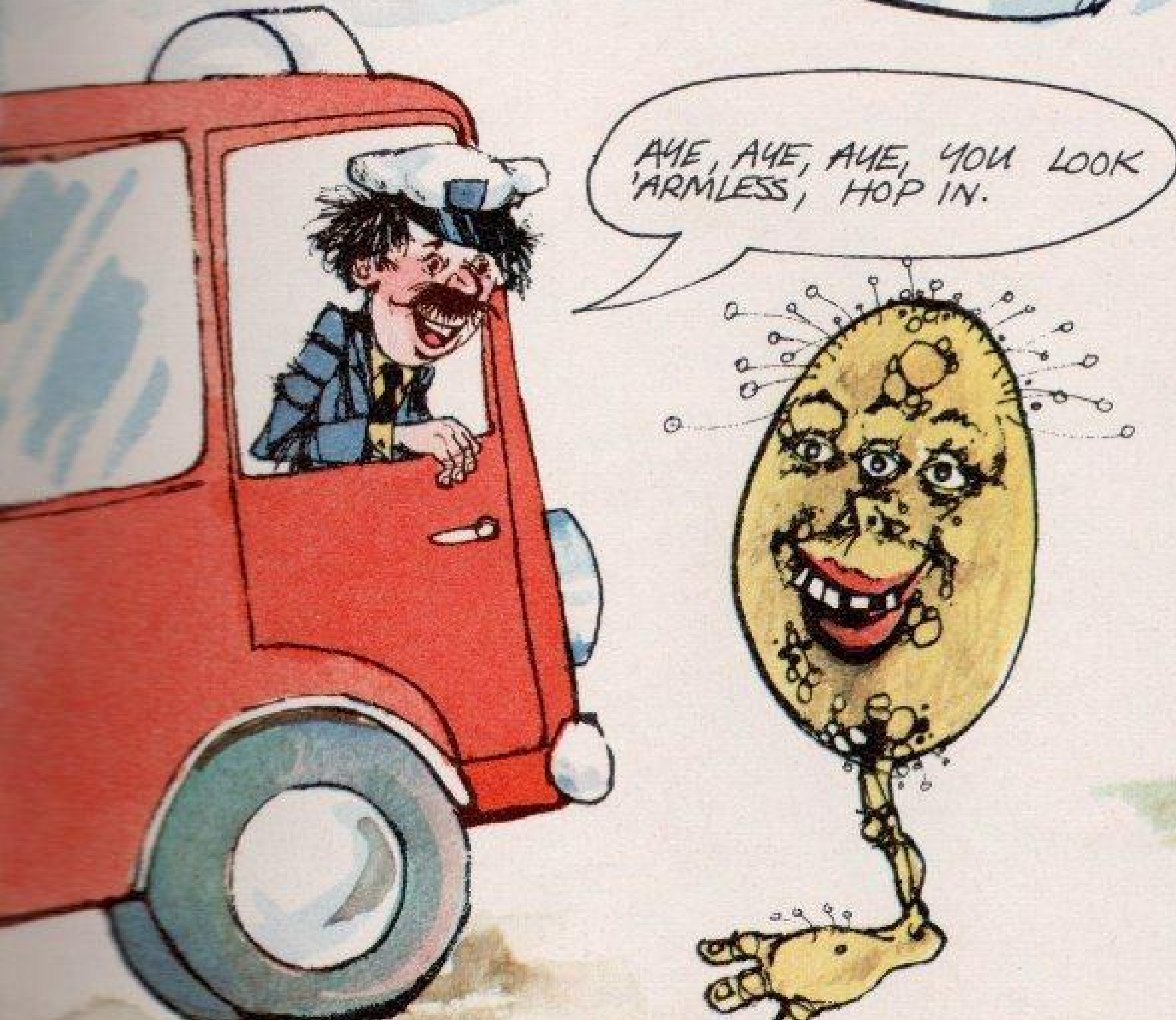
Loony Laffs

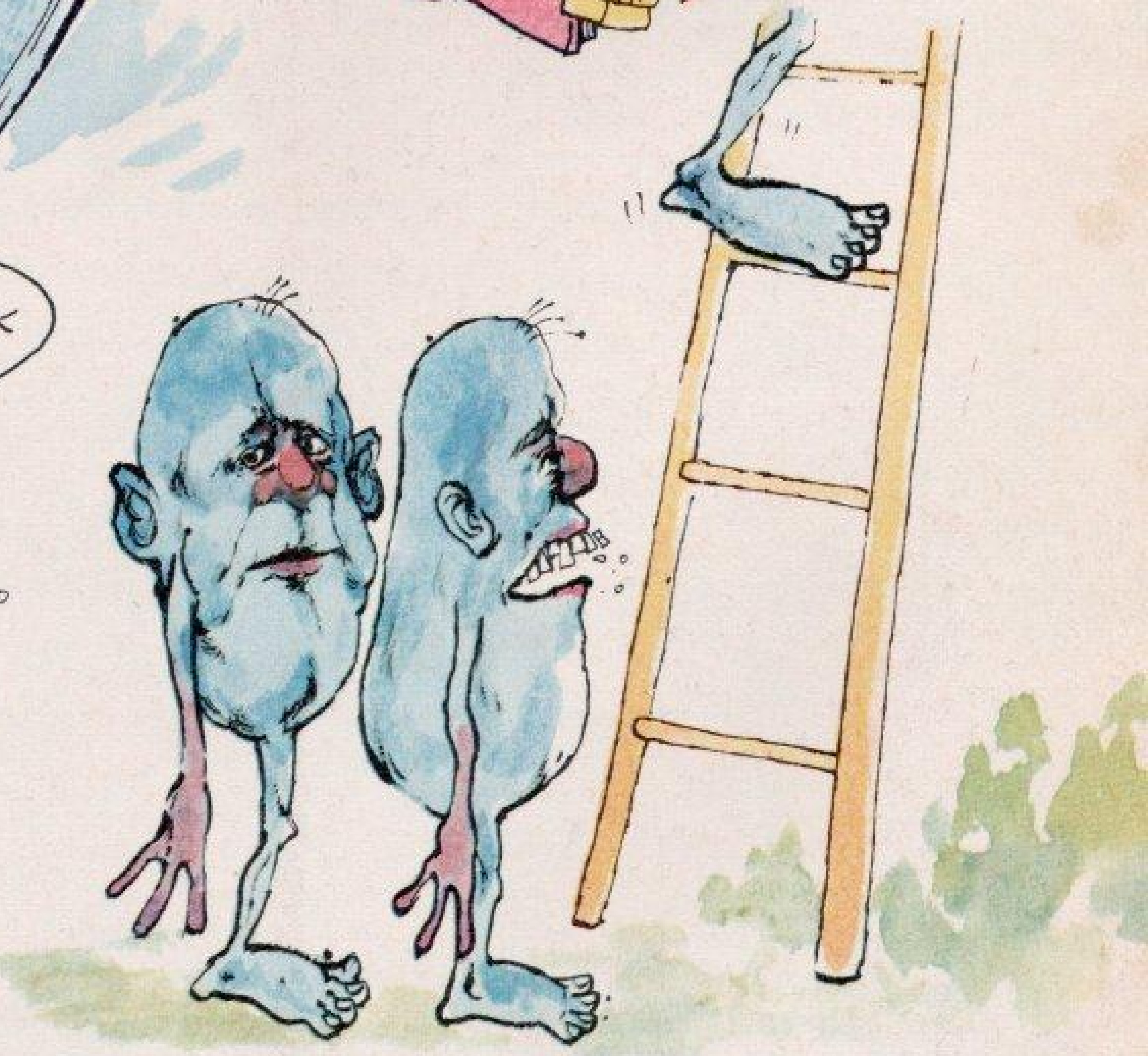

GOOD GRIEF! I THINK HE'S GOING TO COMMIT SUICIDE!


YOU KNOW, XRKL, I FEEL ON TOP OF THE WORLD TODAY.

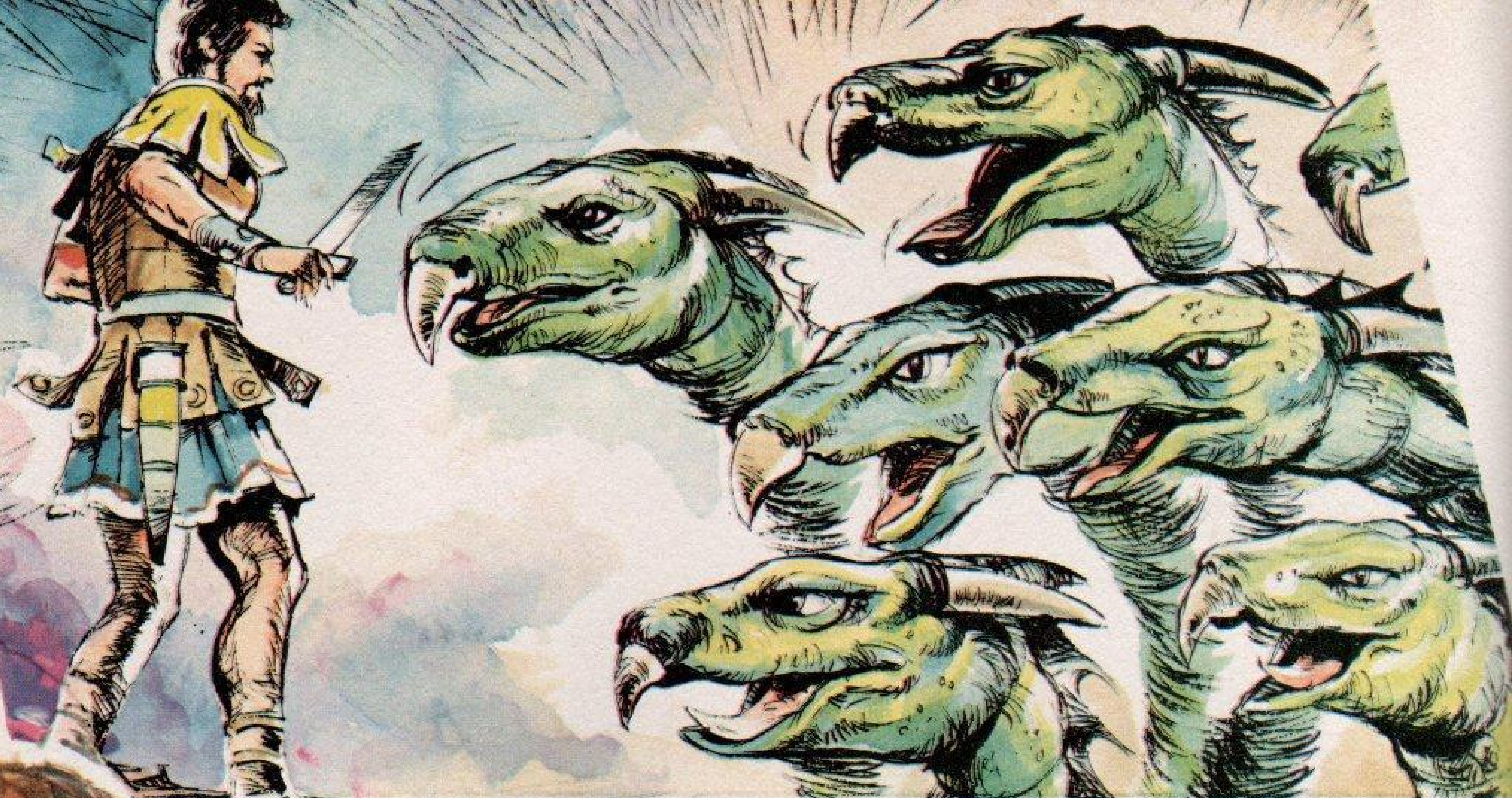

I WONDER WHY THEY THINK WE USE FLYING SAUCERS.




AYE, AYE, AYE, YOU LOOK 'ARMLESS, HOP IN.



HURRY UP, KRZZYX! WE DON'T WANT THE EARTHLINGS TO CATCH US ON THE HOP.



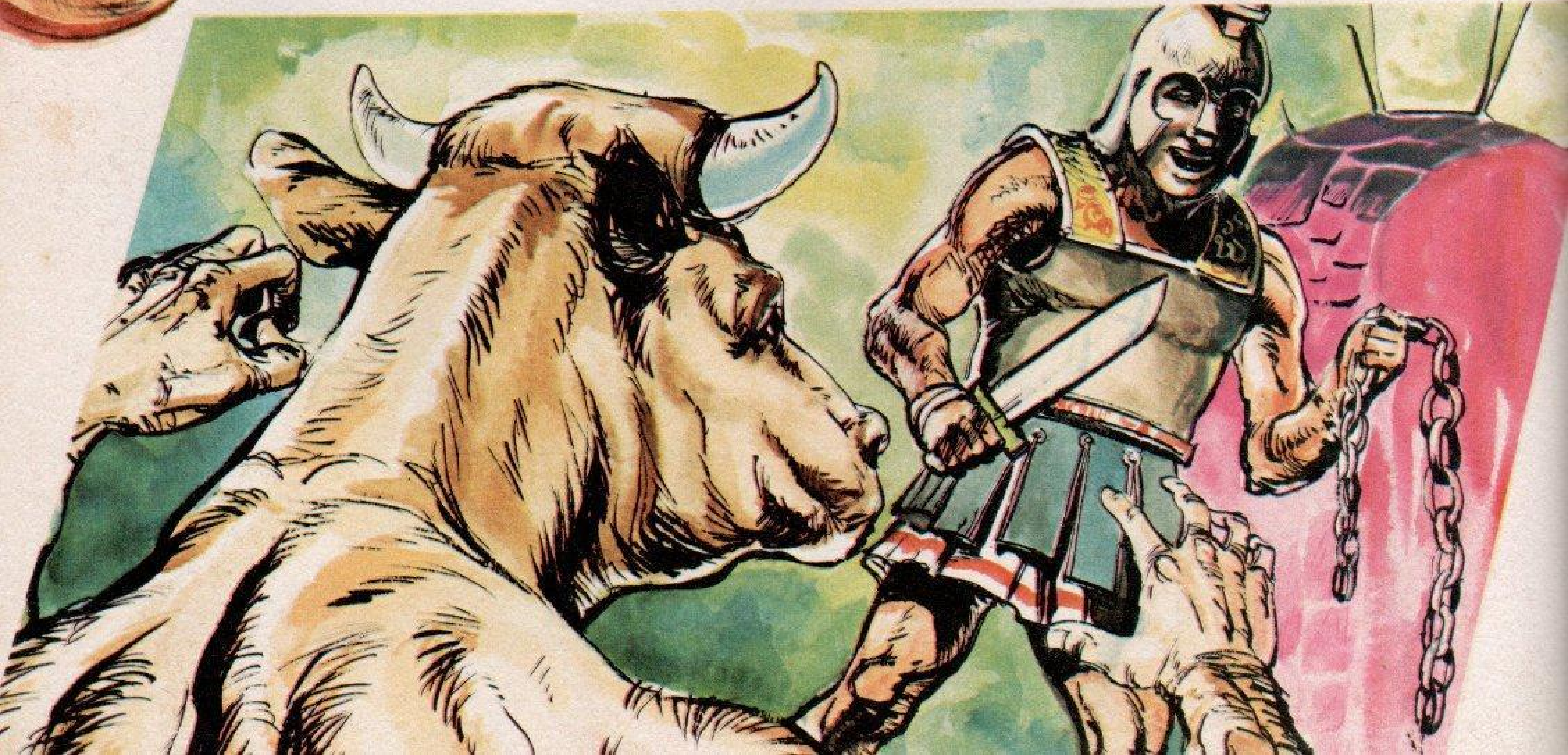
MYTHICAL MONSTERS

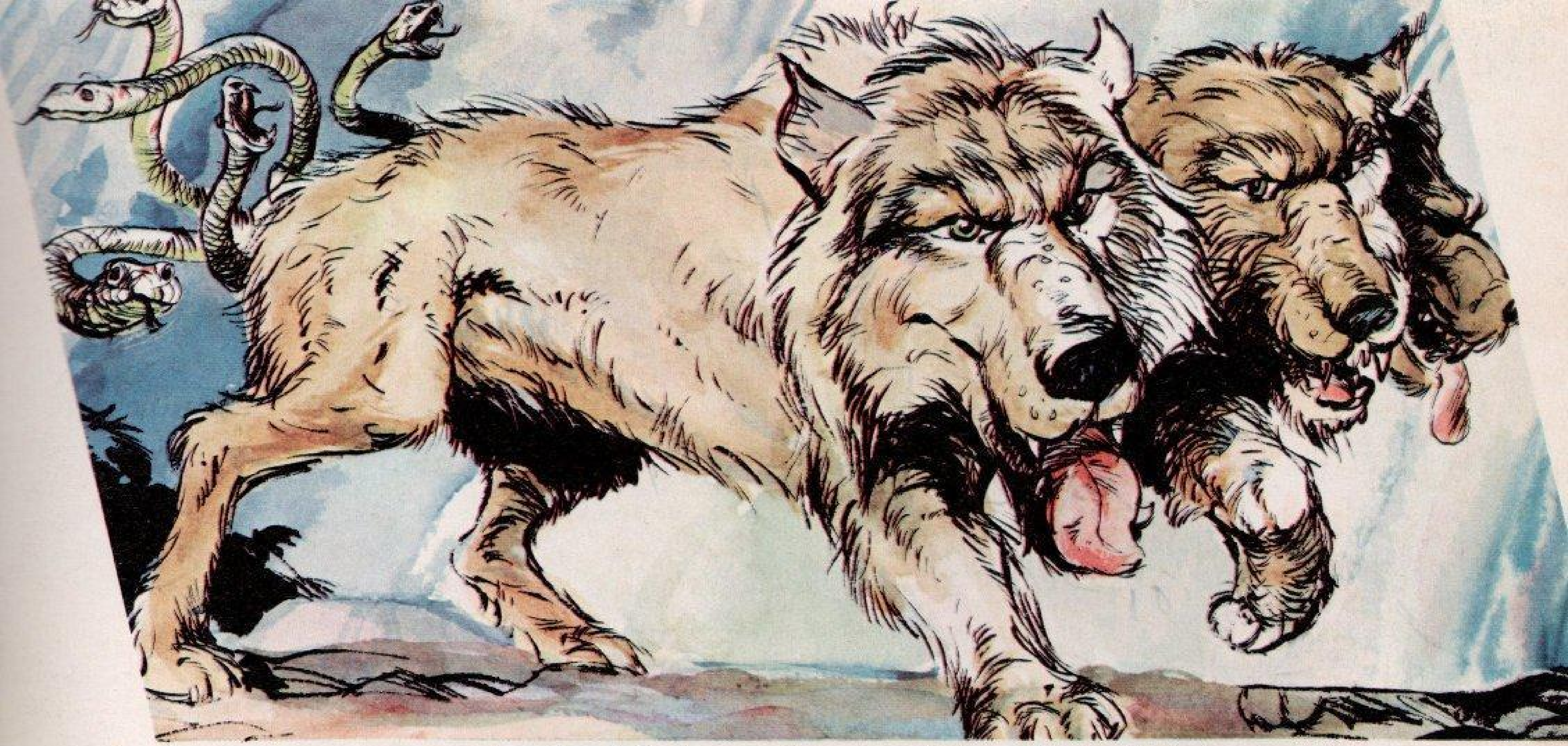
Doctor Who has certainly had to deal with more monsters than most people in his time but according to myths and legends, our ancestors also encountered a few horrors . . . here on earth!

Greek and Roman legends are full of the most horrific monsters. Hercules, a Greek of superhuman strength, was given twelve tasks to perform, and among them was the killing of the terrible Hydra.

The Hydra was a great serpent, with nine ferocious heads. The middle head was immortal, while if one of the other heads was cut off, two more grew in its place. The more Hercules attacked this monster, the more heads it grew, until he ordered his servant to place a burning brand on each wound as he cut off a head. In this way he managed to dispose of all but the middle head, and this he buried under a huge boulder.

This wasn't the only meeting Hercules had with monsters.





Another task was to capture the great bull of the king of Minos, the Minotaur.

This creature had the head of a bull, the body of a man, and it ate human flesh. Every year the king would sacrifice seven maidens and seven young men to the Minotaur, which was housed in a maze-like building from which no one ever escaped; except, of course, Hercules, who succeeded in capturing the bull.

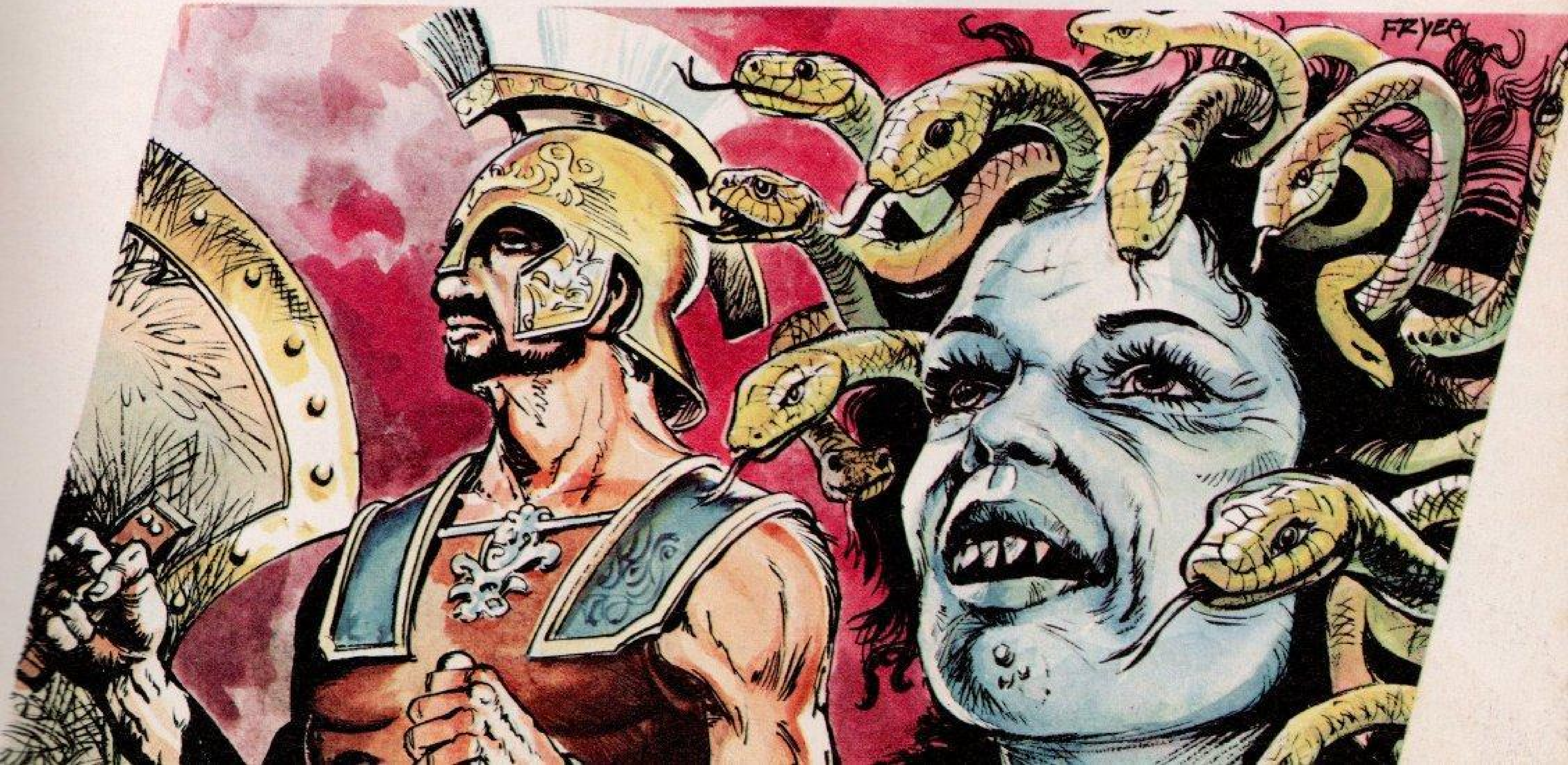
The final task given to Hercules was to bring Cerberus, the guardian of the underworld, back to ancient Greece.

Cerberus was a fierce, three-headed dog, and he guarded the entrance to Hades. Only the spirits of the dead were allowed to enter Hades, and once there, Cerberus made sure that they never escaped. As well as the three heads, his tail was composed of snakes, just in case anyone should try to sneak up on him!

Hercules managed to capture Cerberus; but the Greek king was so terrified of the monster that he ordered him to take him back to Hades.

Another famous monster from the Greek myths is the gorgon, MEDUSA. Medusa had been very beautiful as a young girl, with lovely hair, of which she was very proud. However, she offended the goddess, Athene, and was given a face so horrible that all who looked at it were turned instantly to stone. Not only that, her beautiful hair was turned into a mass of writhing snakes.

She was finally killed by Perseus, who avoided looking at her by using his shield as a mirror while he cut off her head. The winged horse, Pegasus, sprang from her body, and the blood from her left side was a fatal poison, while that from the right side had the power to raise the dead.



APOLLO MANNED MISSION EMBLEMS

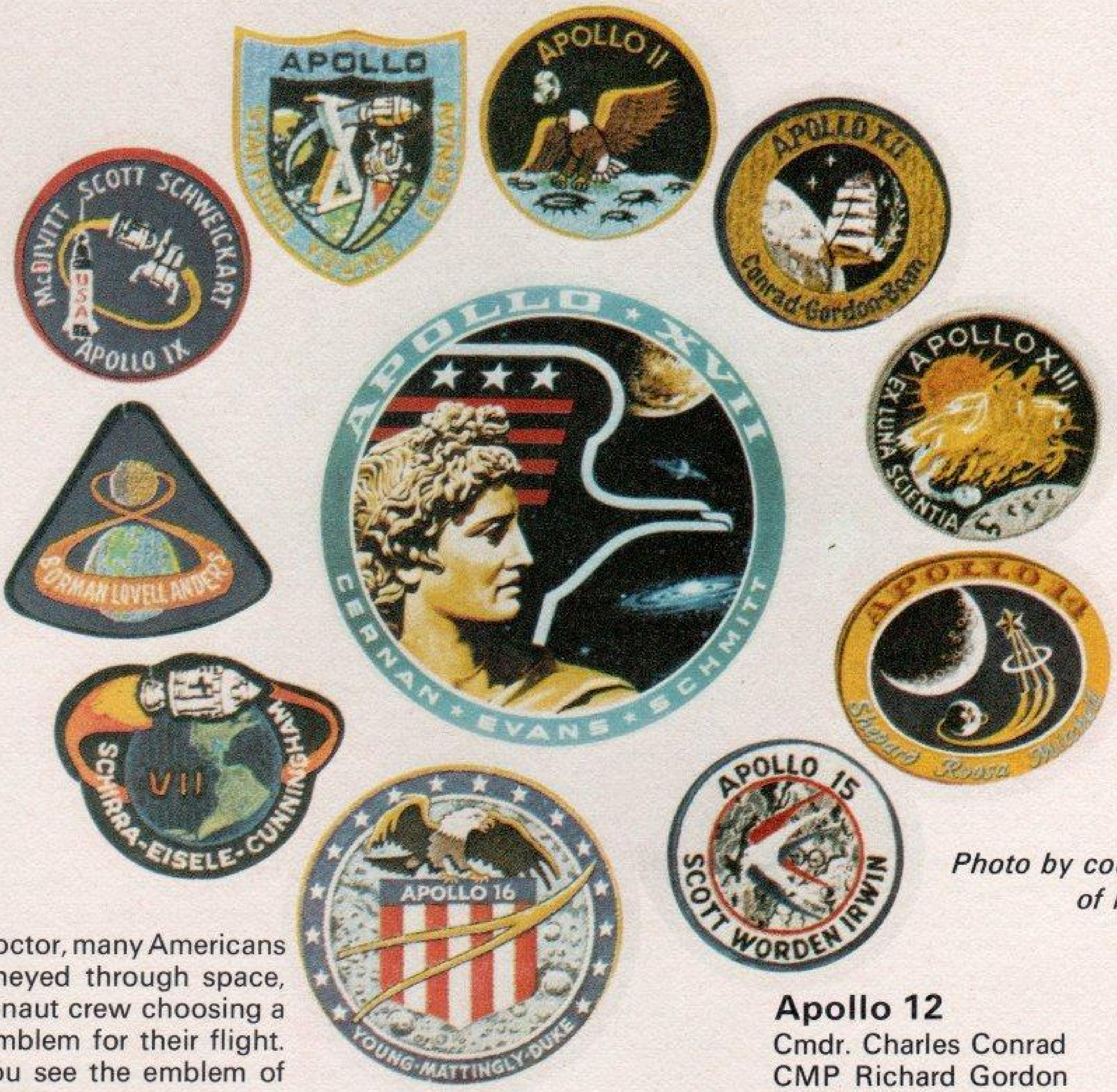

APOLLO
STAFFORD YOUNG CERNAN
APOLLO II
APOLLO XII
Conrad·Gordon·Bean
McDIVITT SCOTT SCHWEICKART
USA
APOLLO IX
APOLLO XVII
CERNAN·EVANS·SCHMITT
APOLLO XIII
EX LUNA SCIENTIA
BORMAN LOVELL ANDERS
APOLLO 14
Shepard Roosa Mitchell
VII
SCHIRRA-EISELE-CUNNINGHAM
APOLLO 15
SCOTT WORDEN IRWIN
APOLLO 16
YOUNG·MATTINGLY·DUKE

Photo by courtesy of NASA

Like the Doctor, many Americans have journeyed through space, each astronaut crew choosing a mission emblem for their flight.

Here you see the emblem of the Apollo 17 crew surrounded by the other ten emblems. Apollo, the Greek God of the Sun, dominates the emblem design for the final landing mission in the space programme which bears its name.

The Apollo 17 crew, in selecting their mission emblem, chose not to emphasise finality, but rather the beginning of the golden age of space flight that their flight ushered in. In the emblem Apollo gazes towards Saturn and a galaxy which symbolises man's goals in space which one day will include the planets and perhaps the stars.

The crews for the Apollo missions, beginning with Apollo 7, include a Commander, a Command Module Pilot and a Lunar Module Pilot. They were:

Apollo 7
Cmdr. Walter M. Schirra
CMP Donn F. Eisele
LMP Walter Cunningham

Apollo 8
Cmdr. Frank Borman
CMP James A. Lovell, Jr.
LMP William A. Anders

Apollo 9
Cmdr. James A. McDivitt
CMP David R. Scott
LMP Russell L. Schweickart

Apollo 10
Cmdr. Thomas P. Stafford
CMP John W. Young
LMP Eugene A. Cernan

Apollo 11
Cmdr. Neil Armstrong
CMP Michael Collins
LMP Edwin Aldrin

Apollo 12
Cmdr. Charles Conrad
CMP Richard Gordon
LMP Alan Bean

Apollo 13
Cmdr. James A. Lovell
CMP John L. Swigert, Jr.
LMP Fred W. Haise, Jr.

Apollo 14
Cmdr. Alan B. Shepard, Jr.
CMP Stuart A. Roosa
LMP Edgar D. Mitchell

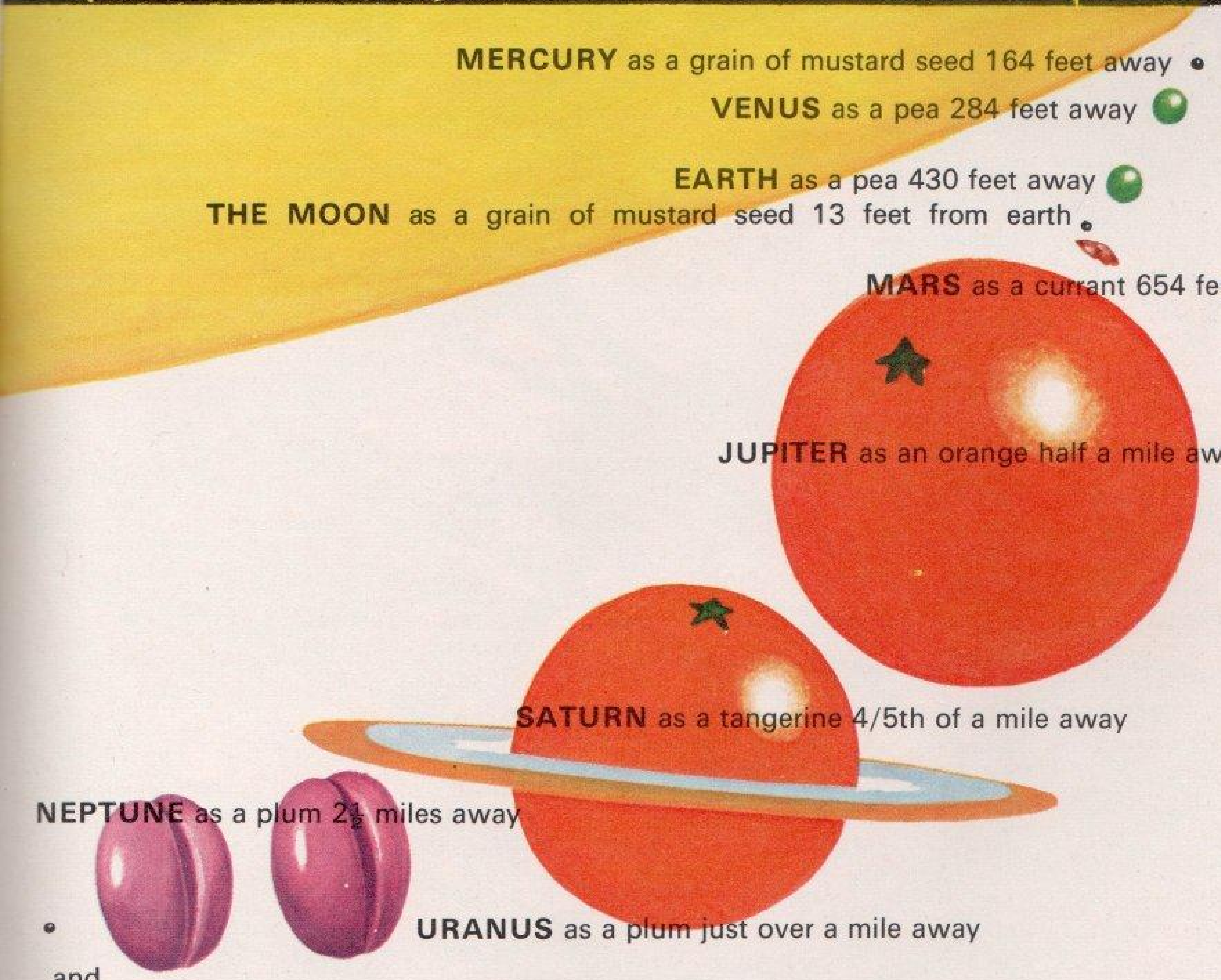
Apollo 15
Cmdr. David R. Scott
CMP Alfred M. Worden
LMP James B. Irwin

Apollo 16
Cmdr. John W. Young
CMP Thomas K. Mattingly, II
LMP Charles M. Duke

Apollo 17
Cmdr. Eugene A. Cernan
CMP Ronald E. Evans
LMP Harrison H. Schmitt

IF...

It's pretty hard to imagine planets as being the size of fruits, vegetables and other everyday objects, but IF the sun was a beachball 12 inches in diameter, the planets in our solar system could be represented like this:



MERCURY as a grain of mustard seed 164 feet away

VENUS as a pea 284 feet away

EARTH as a pea 430 feet away

THE MOON as a grain of mustard seed 13 feet from earth

MARS as a currant 654 feet away

JUPITER as an orange half a mile away

SATURN as a tangerine 4/5th of a mile away

NEPTUNE as a plum 2½ miles away

URANUS as a plum just over a mile away

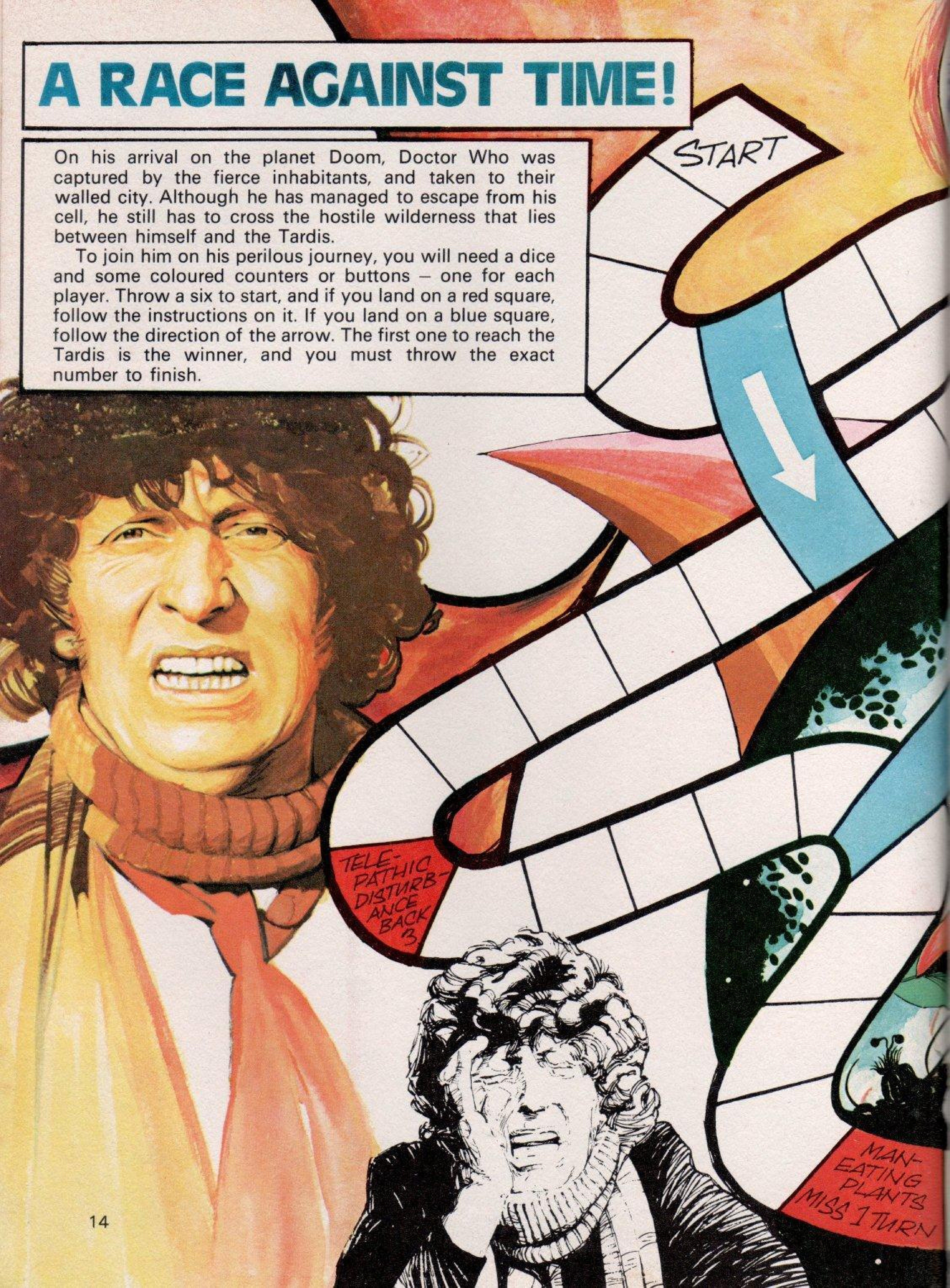
and

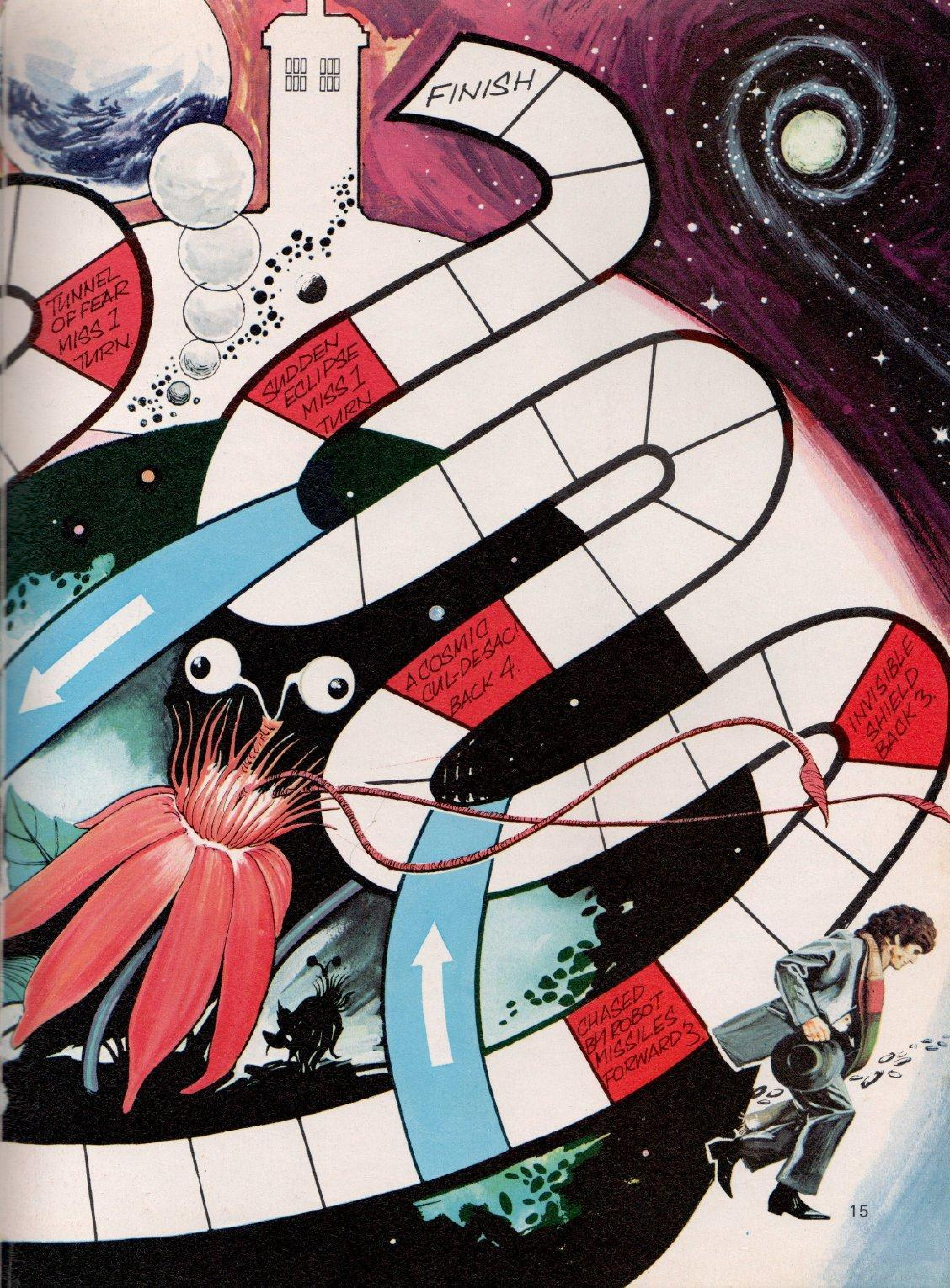
PLUTO as a pinhead in a variable orbit, about 3 miles away.

A RACE AGAINST TIME!

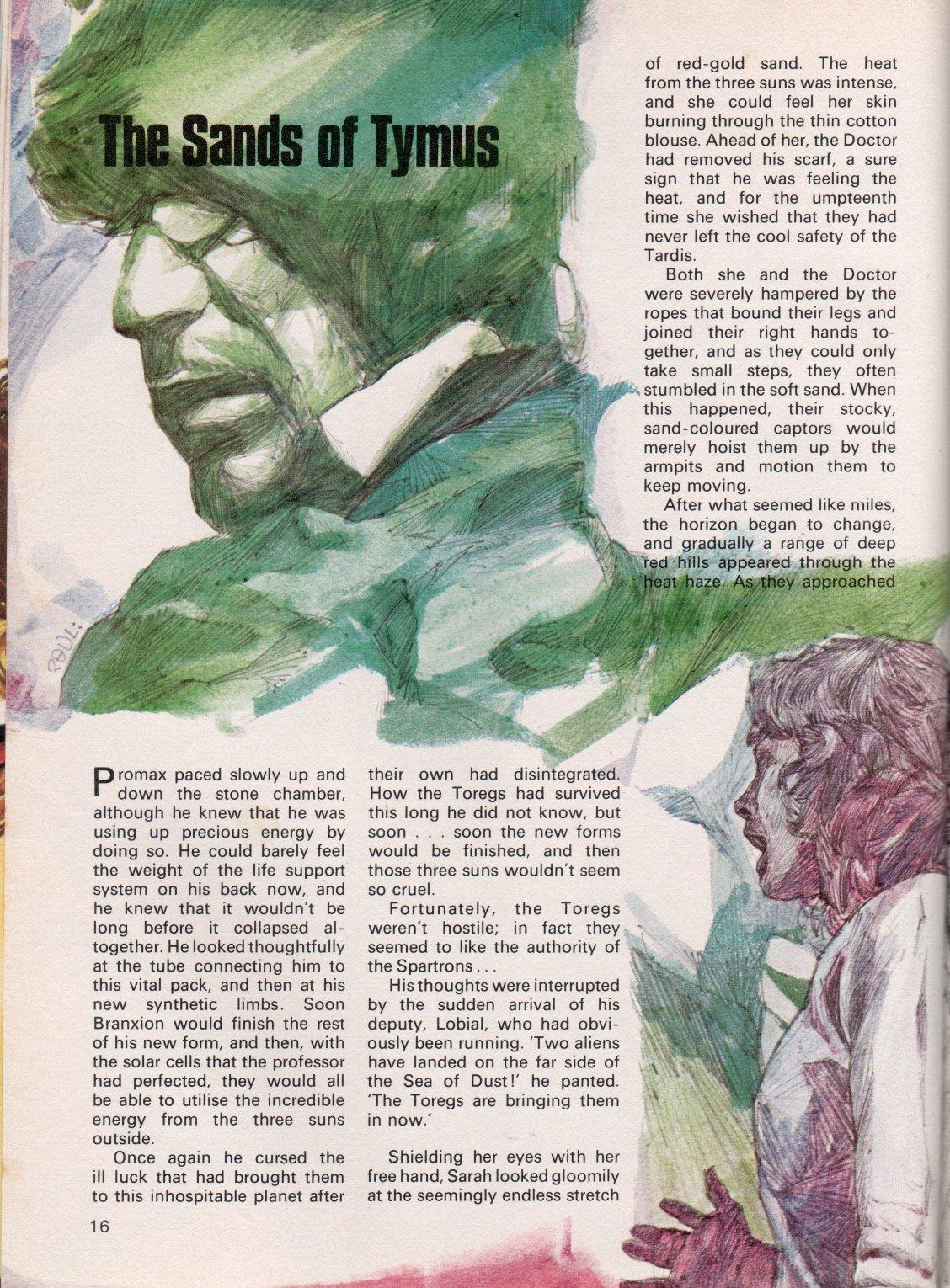
On his arrival on the planet Doom, Doctor Who was captured by the fierce inhabitants, and taken to their walled city. Although he has managed to escape from his cell, he still has to cross the hostile wilderness that lies between himself and the Tardis.

To join him on his perilous journey, you will need a dice and some coloured counters or buttons – one for each player. Throw a six to start, and if you land on a red square, follow the instructions on it. If you land on a blue square, follow the direction of the arrow. The first one to reach the Tardis is the winner, and you must throw the exact number to finish.


START
TELE-PATHIC DISTURB-ANCE BACK 3
MAN-EATING PLANTS MISS 1 TURN


FINISH
TUNNEL OF FEAR MISS 1 TURN.
SUDDEN ECLIPSE MISS 1 TURN
A COSMIC CUL-DE-SAC! BACK 4.
INVISIBLE SHIELD BACK 3.
CHASED BY ROBOT MISSILES FORWARD 3.

The Sands of Tymus



Promax paced slowly up and down the stone chamber, although he knew that he was using up precious energy by doing so. He could barely feel the weight of the life support system on his back now, and he knew that it wouldn't be long before it collapsed altogether. He looked thoughtfully at the tube connecting him to this vital pack, and then at his new synthetic limbs. Soon Branxion would finish the rest of his new form, and then, with the solar cells that the professor had perfected, they would all be able to utilise the incredible energy from the three suns outside.

Once again he cursed the ill luck that had brought them to this inhospitable planet after their own had disintegrated. How the Toregs had survived this long he did not know, but soon . . . soon the new forms would be finished, and then those three suns wouldn't seem so cruel.

Fortunately, the Toregs weren't hostile; in fact they seemed to like the authority of the Spartrons . . .

His thoughts were interrupted by the sudden arrival of his deputy, Lobial, who had obviously been running. 'Two aliens have landed on the far side of the Sea of Dust!' he panted. 'The Toregs are bringing them in now.'

Shielding her eyes with her free hand, Sarah looked gloomily at the seemingly endless stretch of red-gold sand. The heat from the three suns was intense, and she could feel her skin burning through the thin cotton blouse. Ahead of her, the Doctor had removed his scarf, a sure sign that he was feeling the heat, and for the umpteenth time she wished that they had never left the cool safety of the Tardis.

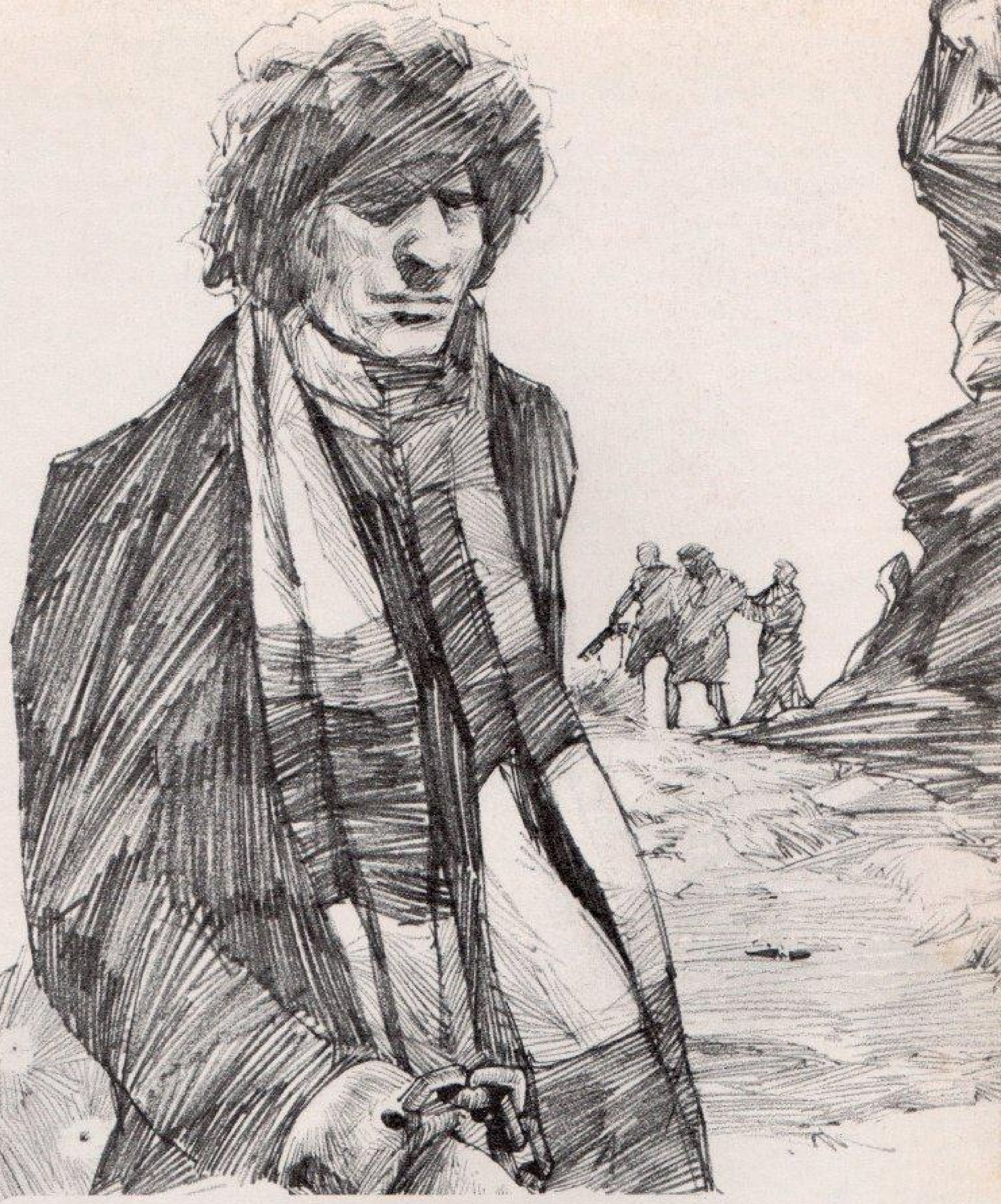
Both she and the Doctor were severely hampered by the ropes that bound their legs and joined their right hands together, and as they could only take small steps, they often stumbled in the soft sand. When this happened, their stocky, sand-coloured captors would merely hoist them up by the armpits and motion them to keep moving.

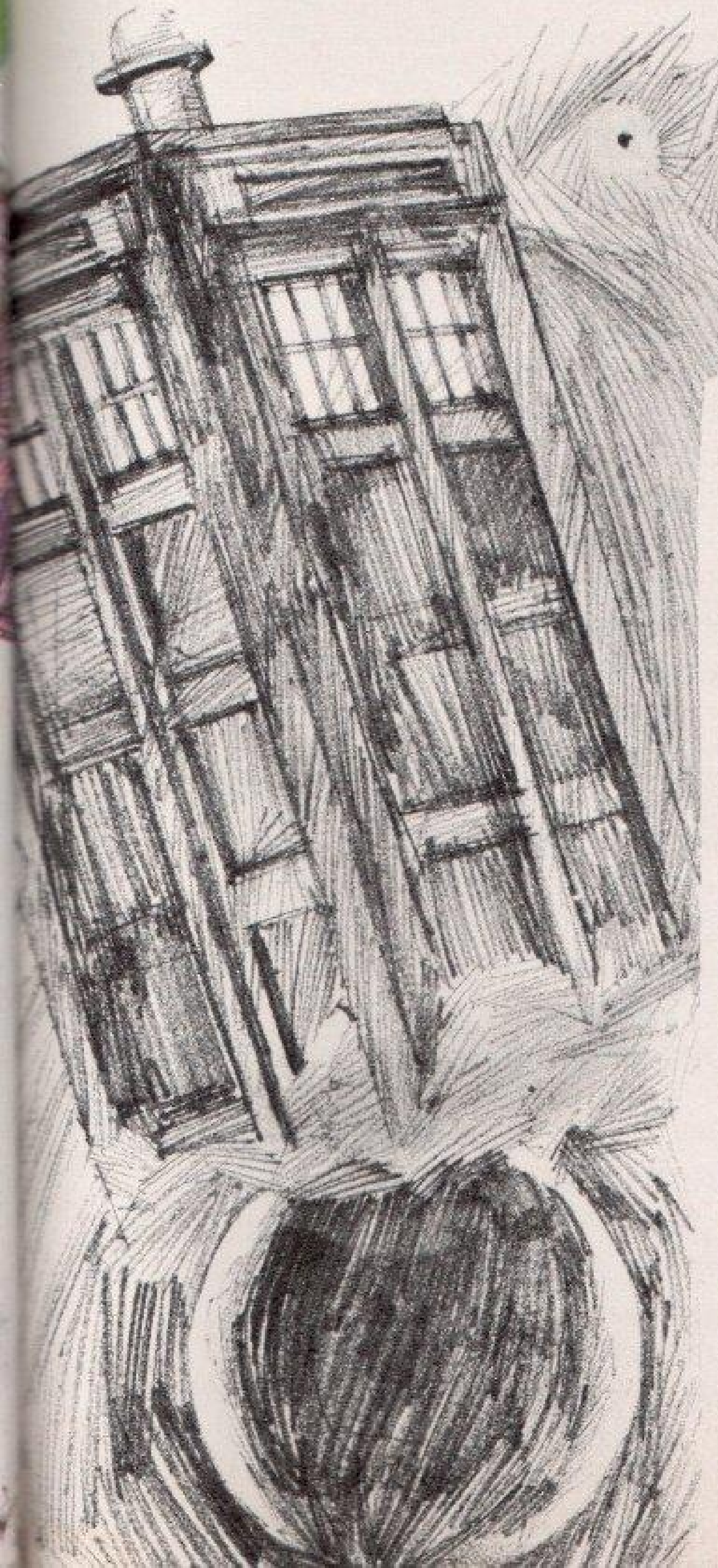
After what seemed like miles, the horizon began to change, and gradually a range of deep red hills appeared through the heat haze. As they approached them, the Doctor saw that a whole city had been carved out of the rock, to give the only shade in the whole of that barren desert.

Sarah also saw the rocks for a moment. But as they came into view, her vision began to blur, and her legs buckled under her. Before everything went black she heard the Doctor say, 'Sarah, are you alright?' Then she slipped into merciful oblivion.

When they reached the city, the Doctor and his companion were taken to a small room in the largest of the red buildings. Sarah was still unconscious, so two of the Toregs laid her gently on a stone slab in one corner, while another untied the ropes that still bound the Doctor's legs.

When they had gone, closing the massive door behind them, the Doctor sighed. They might just as well have tied him hand and foot for all the chance there was of getting out of there. Stone walls, the merest slit of a window, and no sign of Sarah coming round either. He sighed again, and settled himself against the wall facing the door to wait for developments. The stone was cool to his back after the burning heat outside.





He didn't have long to wait. Promax and Branxion were both very anxious to see the new arrivals, and they hurried over to the small chamber as soon as they heard the news.

Promax was the first to see Sarah, and as he did so, his face changed. 'A female! Branxion, do you see that? It's a female!'

'That's very observant of you,' remarked the Doctor sarcastically, but no one was listening to him. The two Spartrons had rushed to the stone slab where Sarah lay, and were talking excitedly.

'She's perfect, just perfect!' he could hear one of them saying, but as he moved towards them, two hefty Toreg guards blocked his way and pushed him back against the wall.

'I'm a much better looking specimen than that creature,' he said, in an effort to distract them. 'You'll find that I am very intelligent too.'

But it was no use. Helplessly, he had to watch as Branxion ordered the Toregs to take Sarah to his 'workshop', and it was only when they had gone that Promax finally turned to him.

'This is a lucky day for us,' he told the astonished Doctor. 'Your companion will make the ideal subject for our female renewal programme. We had almost given up hope . . .'

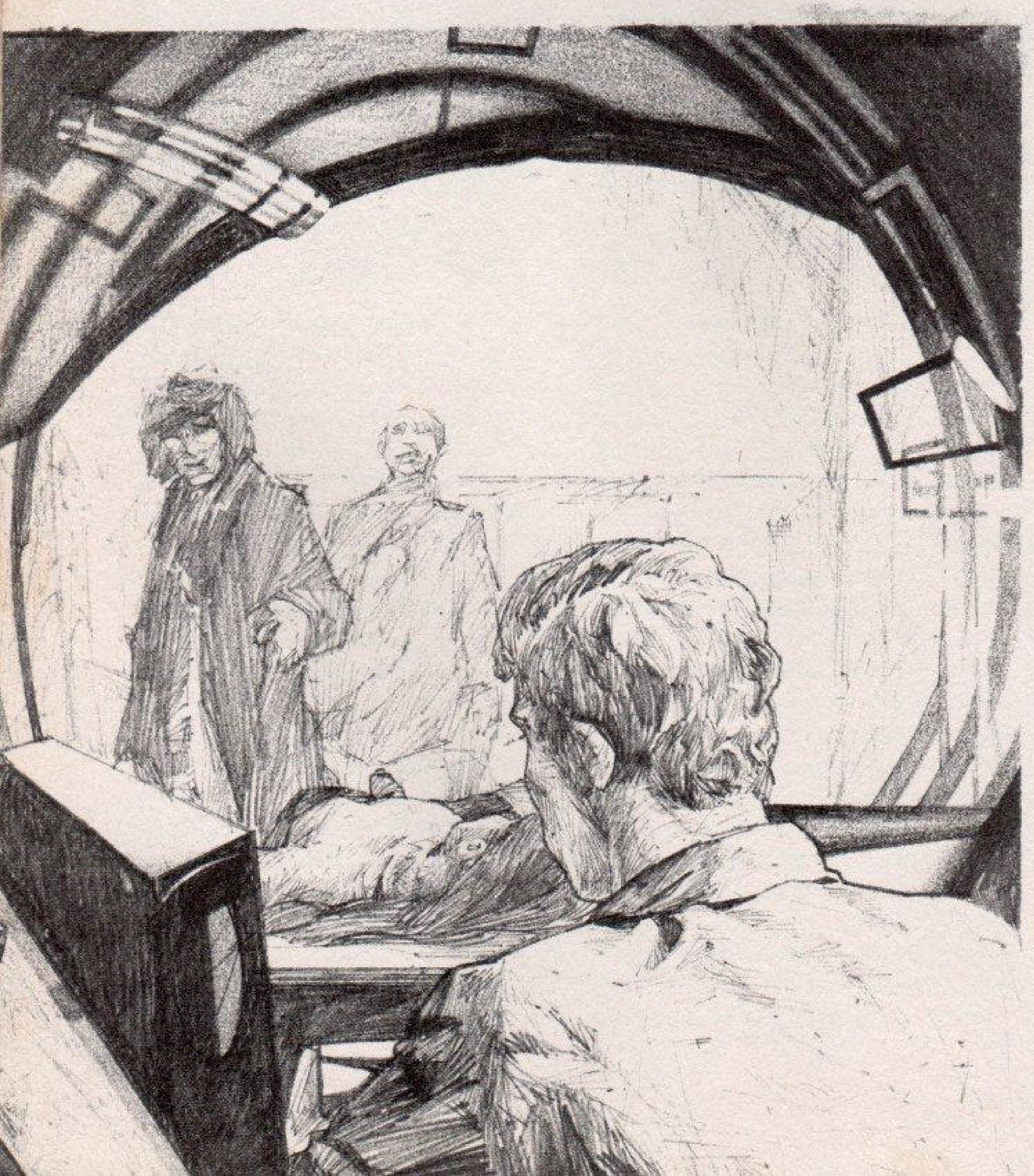
'Excuse me if I appear obtuse,' interrupted the Doctor, 'but what on earth are you talking about? And more important, what are you doing with my assistant?'

Promax sighed. He had already used up far too much energy for one day, but he supposed that this alien was owed some kind of explanation, if only because he had brought the female.

'We are not natives of Tymus,' he began, 'and, as you can see, we are not very well adapted to life on this planet. At least not yet. Branxion has been working on new solar-powered forms for us ever since we arrived, and soon we hope to get all our energy from the three suns out there. Unfortunately, however, our females did not survive long in this heat, and consequently we have had no one on whom to base our female form – until now, of course. Come, I will show you what I mean.'

This was what the Doctor had been hoping for. If he could only get inside the 'workshop', he might be able to rescue Sarah before it was too late. As they walked along the stone corridors, he tried to remember landmarks so that they could find their way back again if they managed to escape. But he had to admit that, at the moment, their chances seemed pretty slight.

The two big Toregs on either side of him had never left him for a moment, and as Promax led them to a big double door, they each took one of the Doctor's arms. 'I must ask you to be very quiet in here,' said Promax. 'It is imperative that Branxion is not disturbed.' With that, he pressed a button and the huge doors swung open.



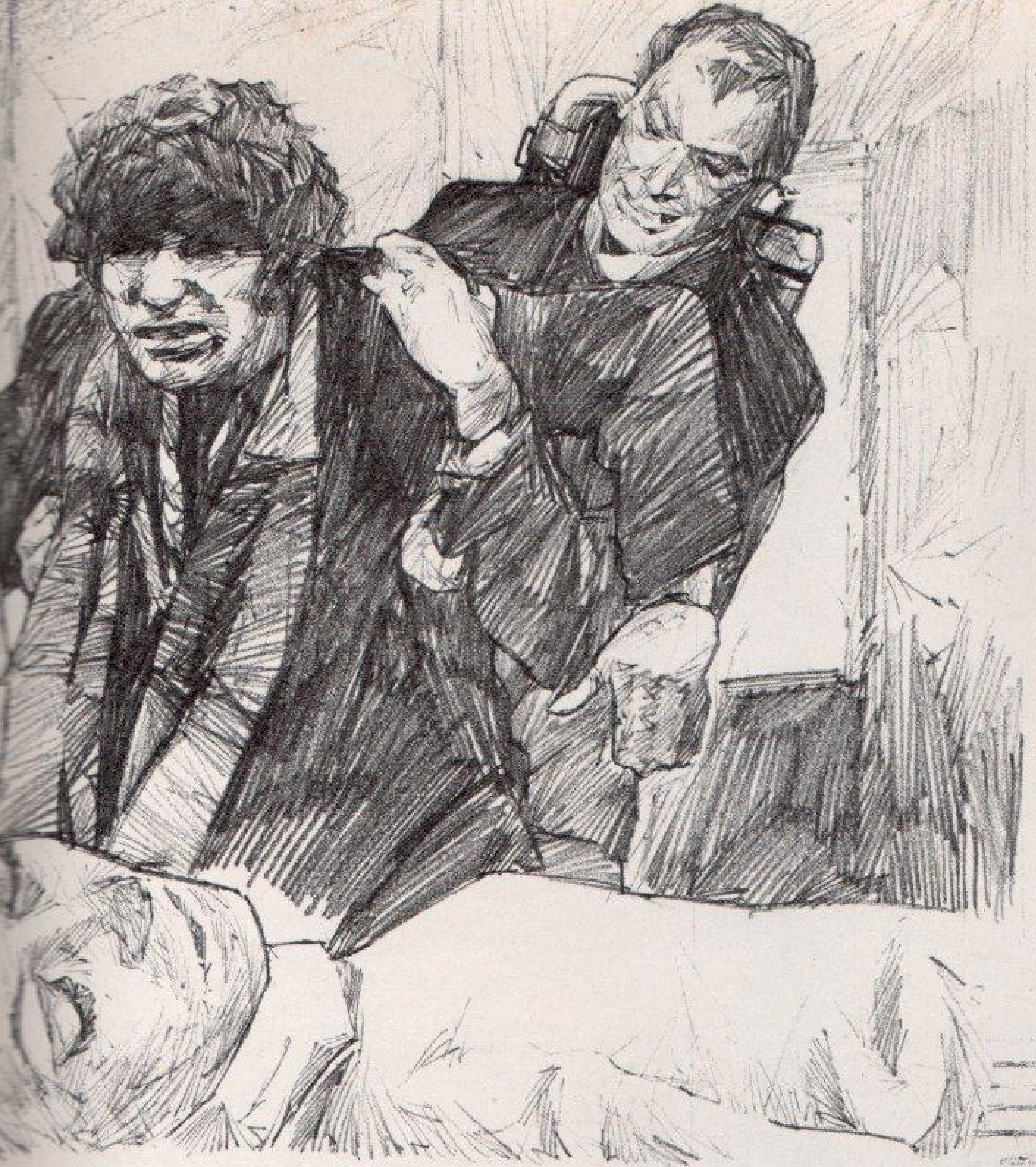
In spite of himself, the Doctor was impressed. The huge stone chamber, with its high, vaulted ceiling, had been turned into a complete laboratory, equipped with some highly advanced machinery. Obviously the Spartrons had brought their own technology with them, and Branxion had wasted no time in adapting their bodies to the new conditions. Most of the Spartrons working in the laboratory had at least one 'artificial' limb, and all round the walls, the various parts of the new forms hung, ready and waiting to be given life.

The Doctor shuddered to think that Sarah was going to end up like this, and he redoubled his efforts to find her among the clicking, whirring machines.

Branxion was working in the far corner of the room, and as Promax led them towards him, the Doctor noticed a kind of cage lying horizontally at the mouth of a tubular piece of machinery.

Inside it lay Sarah, still unconscious, and even as they watched, the cage began to move slowly into the machine. Promax had stopped to watch, and the Doctor took the opportunity to break free from the Toregs in a desperate effort to stop the cage's slow progress. Pushing Branxion aside, he frantically flung back all the knobs and levers, but it was no use. The cage continued its journey into the gaping tube until it finally disappeared from view.

Quickly, the Toregs pulled the distraught Doctor away from the machine, while Branxion anxiously consulted his dials and charts. 'It's alright, he hasn't done any damage,' he



told Promax, 'fortunately the cycle had already begun.'

Promax regarded the Doctor sternly. 'That was a very foolish action on your part,' he said, shaking his head. 'You could have caused your assistant a lot of pain.'

'At least I would have got her out of there, and away from the fate that you have in store for her!' retorted the Doctor.

But Promax simply smiled. 'You seem to have got the wrong idea about our work here,' he said, leading the Doctor to the other end of the big machine. 'Am I right in thinking that the renewal programme is almost over, Branxion? Ah, yes, here we are.'

The red light on the top of the tube had gone out, and as they watched the cage began to appear. The Doctor hardly knew what to expect as he looked into the contraption. Sarah certainly looked the same, but was she? Perhaps this was just the first of a whole row of synthetic Sarahs? He couldn't bear to think about what had happened to the real Sarah.

'Doctor! What am I doing in here? Get me out of here!' The voice was the same certainly.

'Sarah? Is it really you?' he said, peering at her uncertainly.

'Of course it's me!' said Sarah, impatiently. 'Come on, help me!'

The lid of the cage had swung open, and with a grin of relief, the Doctor gave her his arm as she scrambled out. This was no plastic dummy, this was flesh and blood! 'Am I glad to see you!' he said. 'You gave me a nasty turn just now.'

Now that she was on her feet, Sarah looked round in amazement.

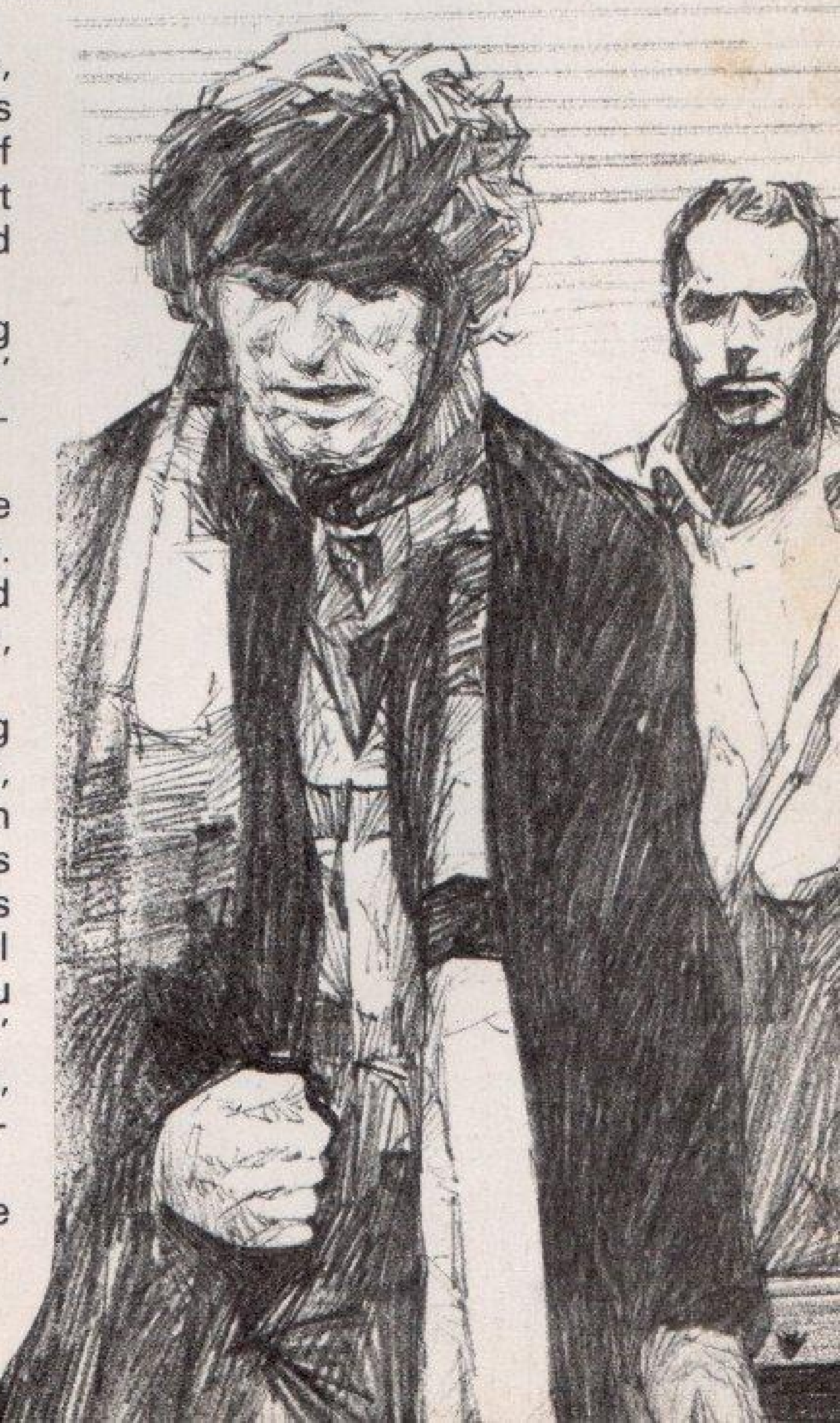
'Would you mind telling me what's going on? The last thing I remember is walking through the desert, and yet here I am in what looks like Frankenstein's laboratory!'

'You are nearer the truth than you know,' murmured the Doctor. 'But I think that perhaps our host can explain it all to you better than I.'

Later, in the comfort of Promax's own quarters, Sarah asked if all the new females would really look like her.

'Yes, indeed,' answered the Spartron leader, 'and although we would have liked a little more variety, who could resist such a lovely form as our females will take?'

The Doctor decided that all this flattery had gone far enough. 'I don't know about that, but if her temper is anything like Sarah's, you all have my sympathy!' and he ducked as one of Sarah's shoes flew across the room.

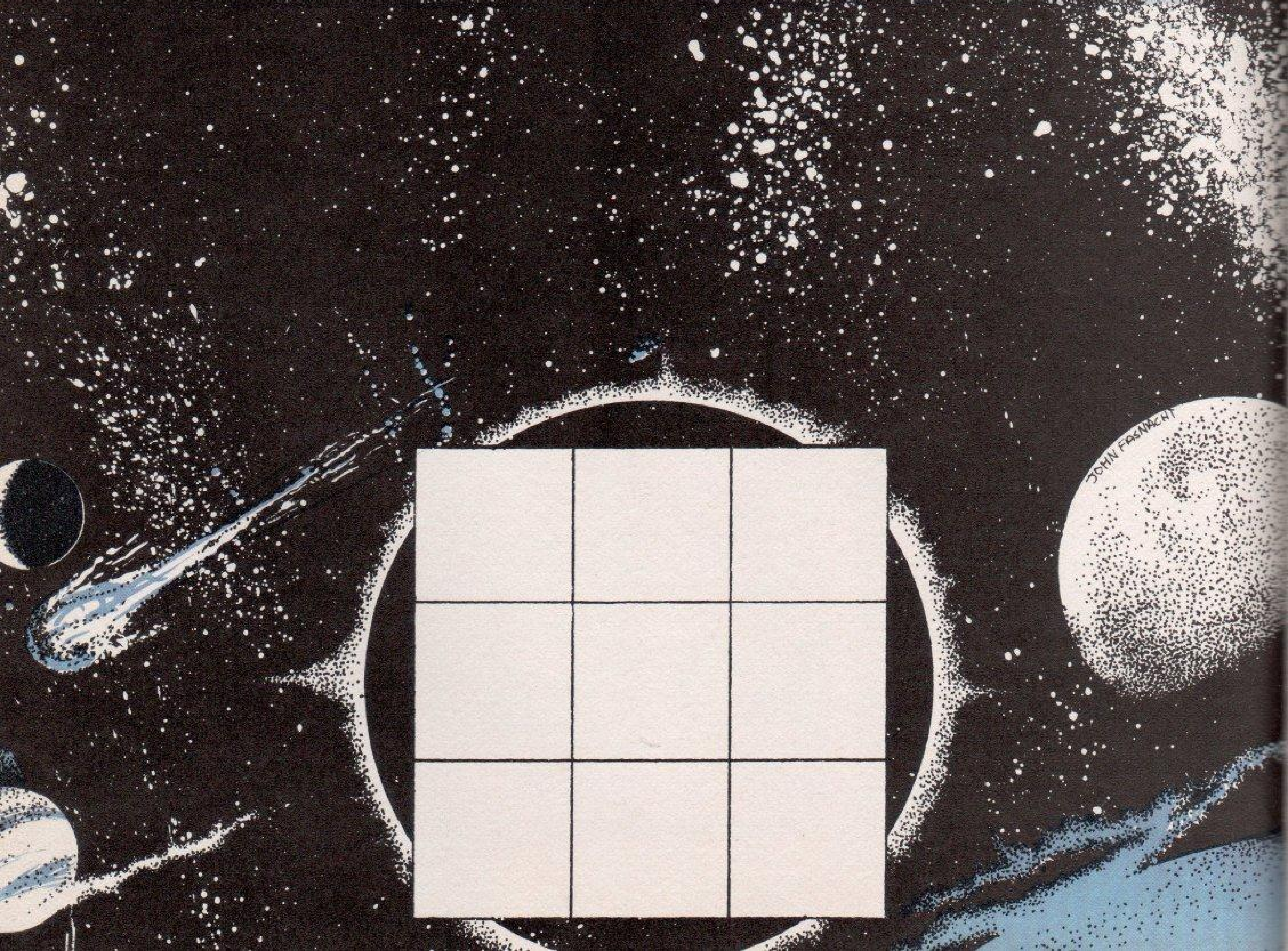


Celestial Squares

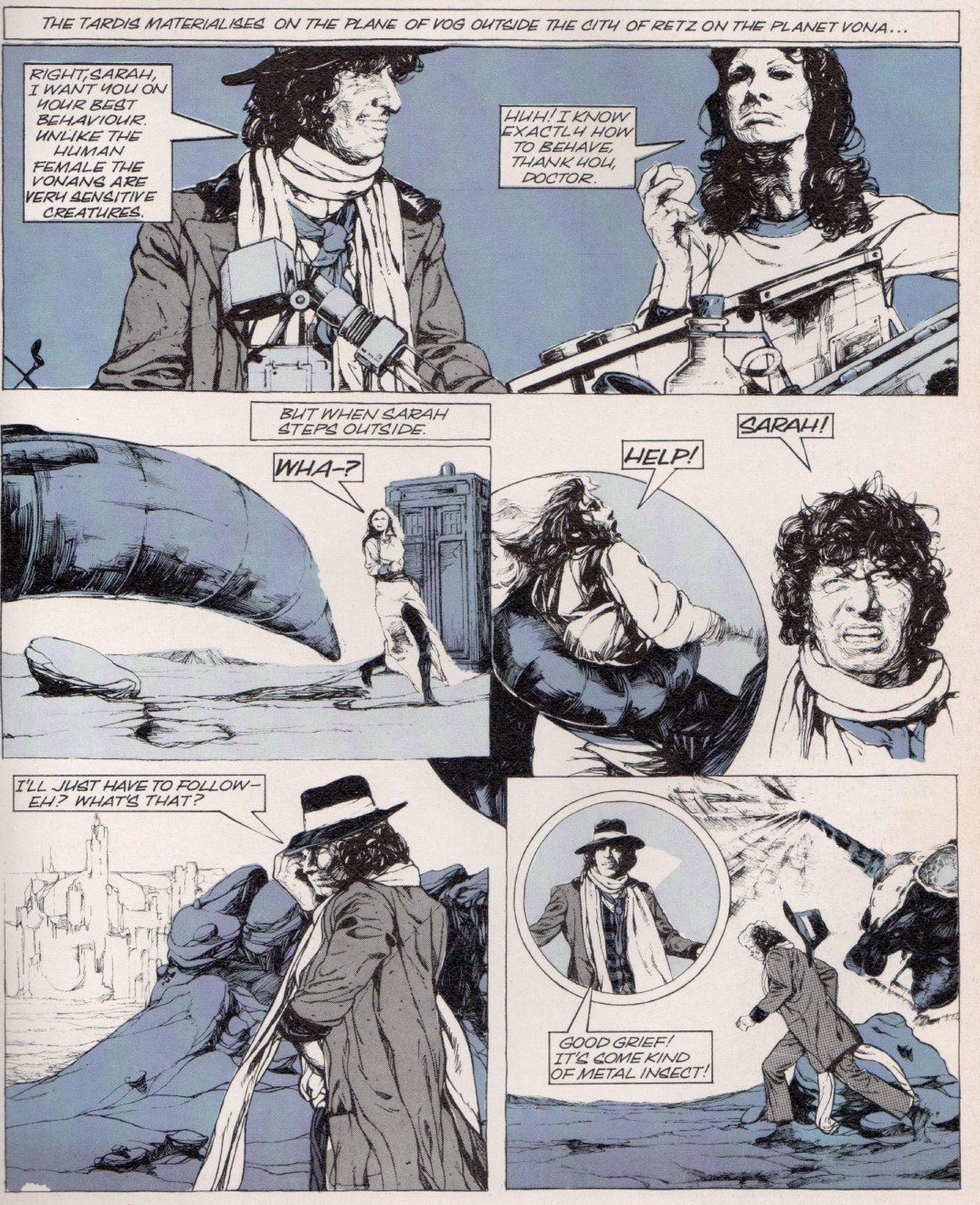
Here's a quiz game about the planets in our solar system. See how much you and your friends know, filling in either an O or an X when you get the right answer. The winner is the first player to complete a line, up, down, across or diagonally. When you've filled this one in, draw your own boards.

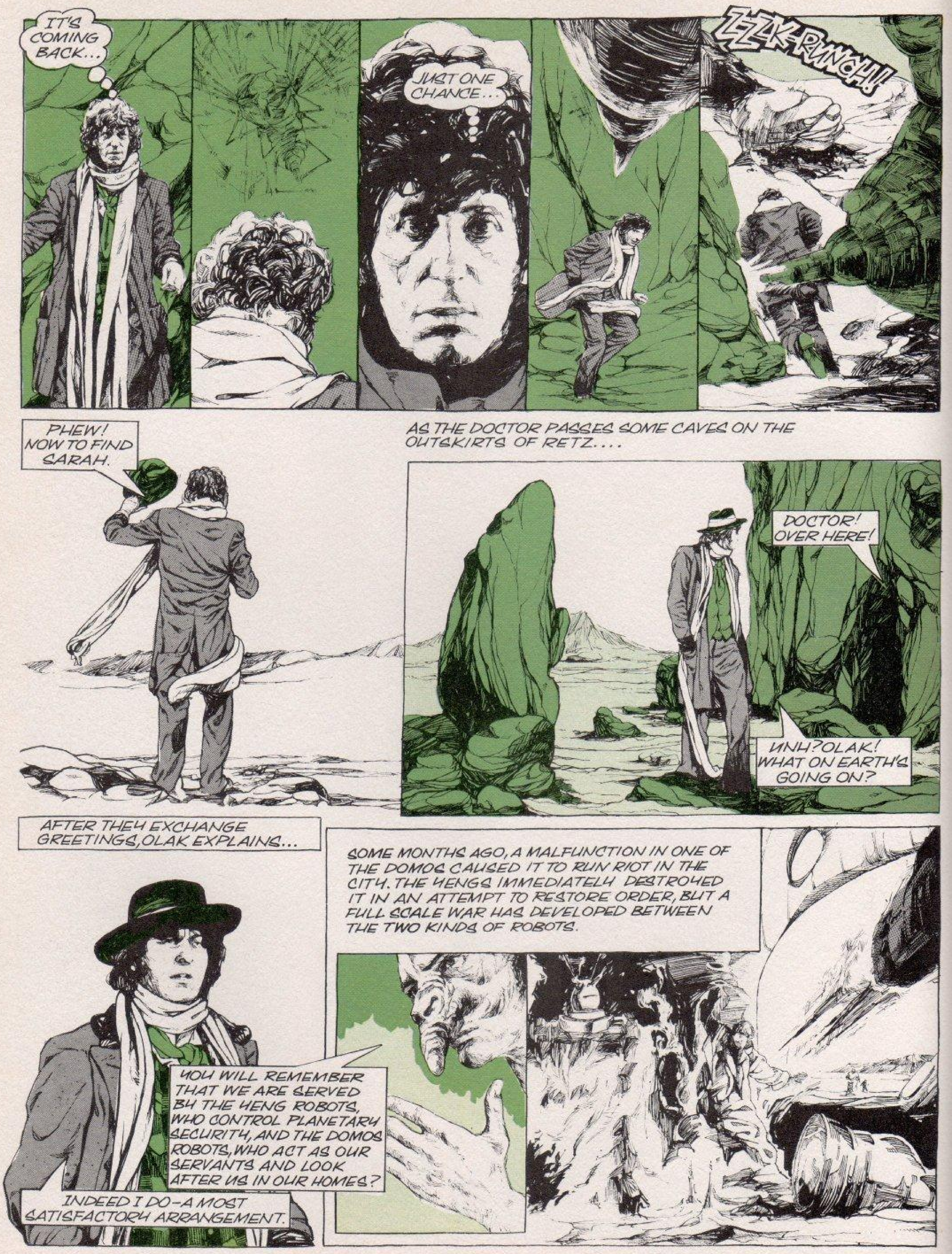
1. Which planet has 12 moons?
2. What separates the orbits of Jupiter and Mars?
3. Which planet is closest to the sun?
4. How many moons has Uranus?
5. Venus, Earth and Mars are known as terrestrial planets. Can you name the other?
6. Which planet is covered with carbon dioxide clouds?
7. Which planet's rotation and revolution round the sun are exactly the same?
8. Which is the only planet with just one moon?
9. Which was the last planet to be discovered?
10. What is the name of the planet with rings?
11. Which planet was discovered because of its gravitational pull on Uranus?
12. Which planet is surrounded by orange, red brown and white bands and has a red spot?
13. Which planet is farthest from the sun?
14. Which planet has large desert areas of red sand on its surface?
15. Which is the smallest planet?

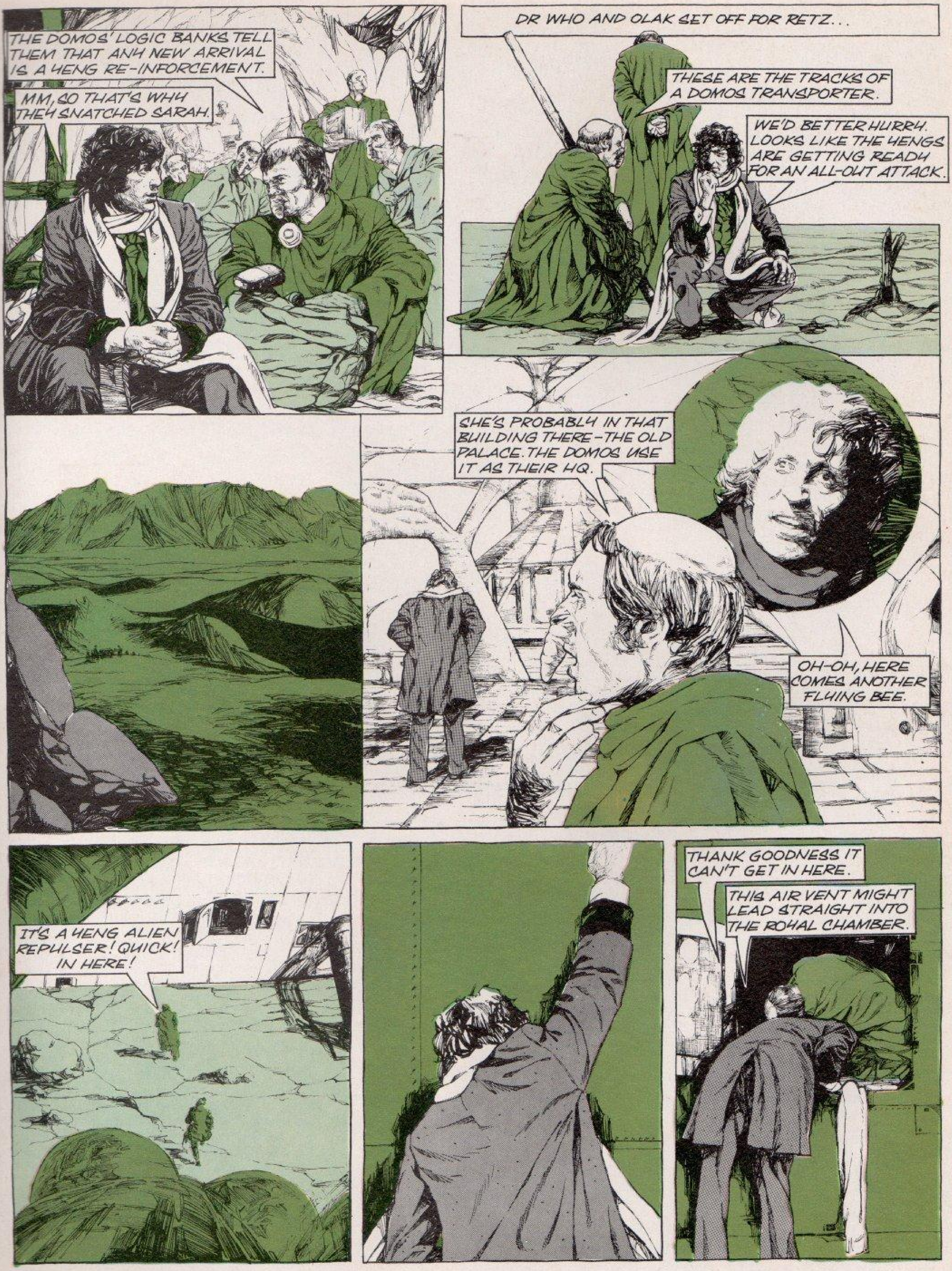
The answers are on page 60

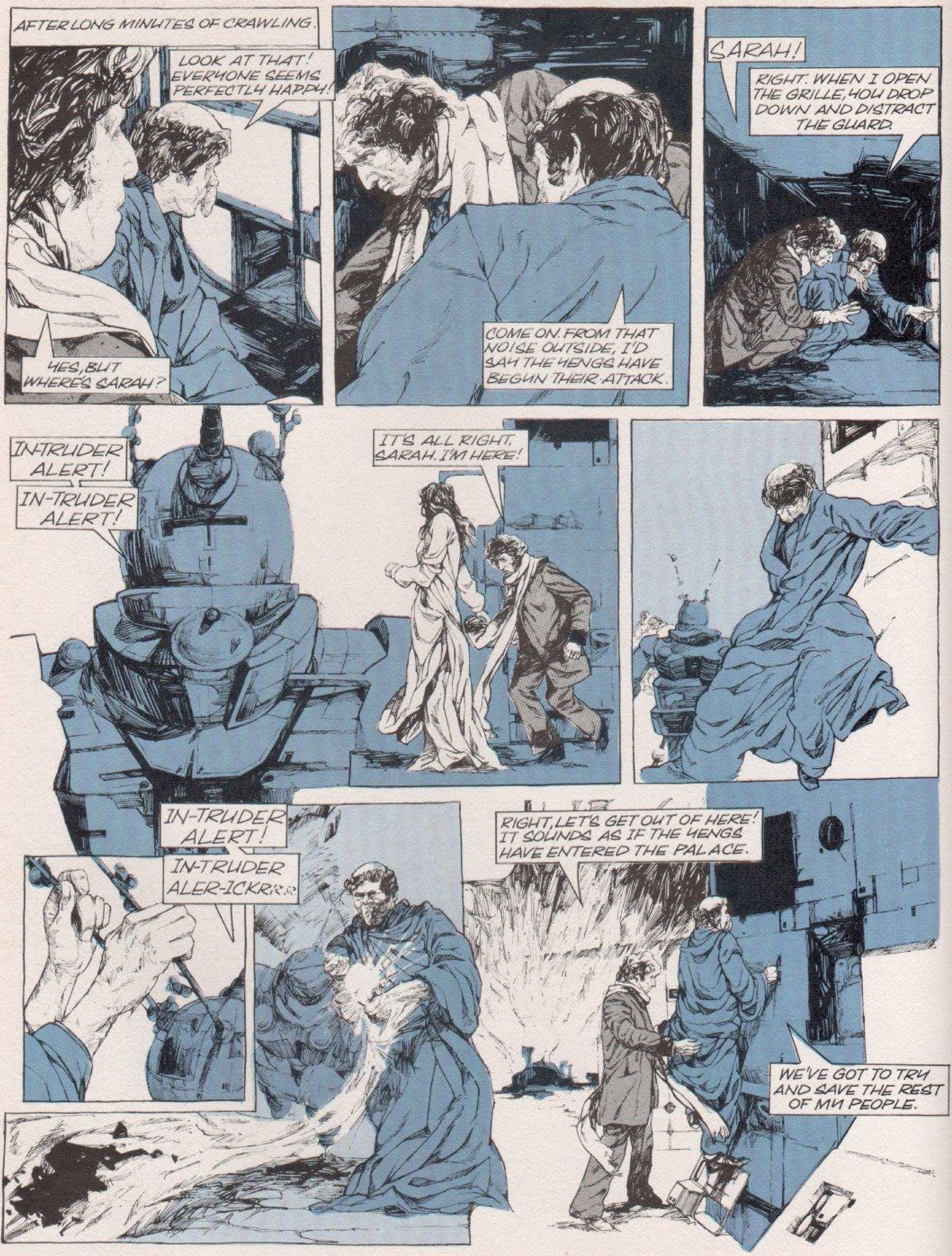


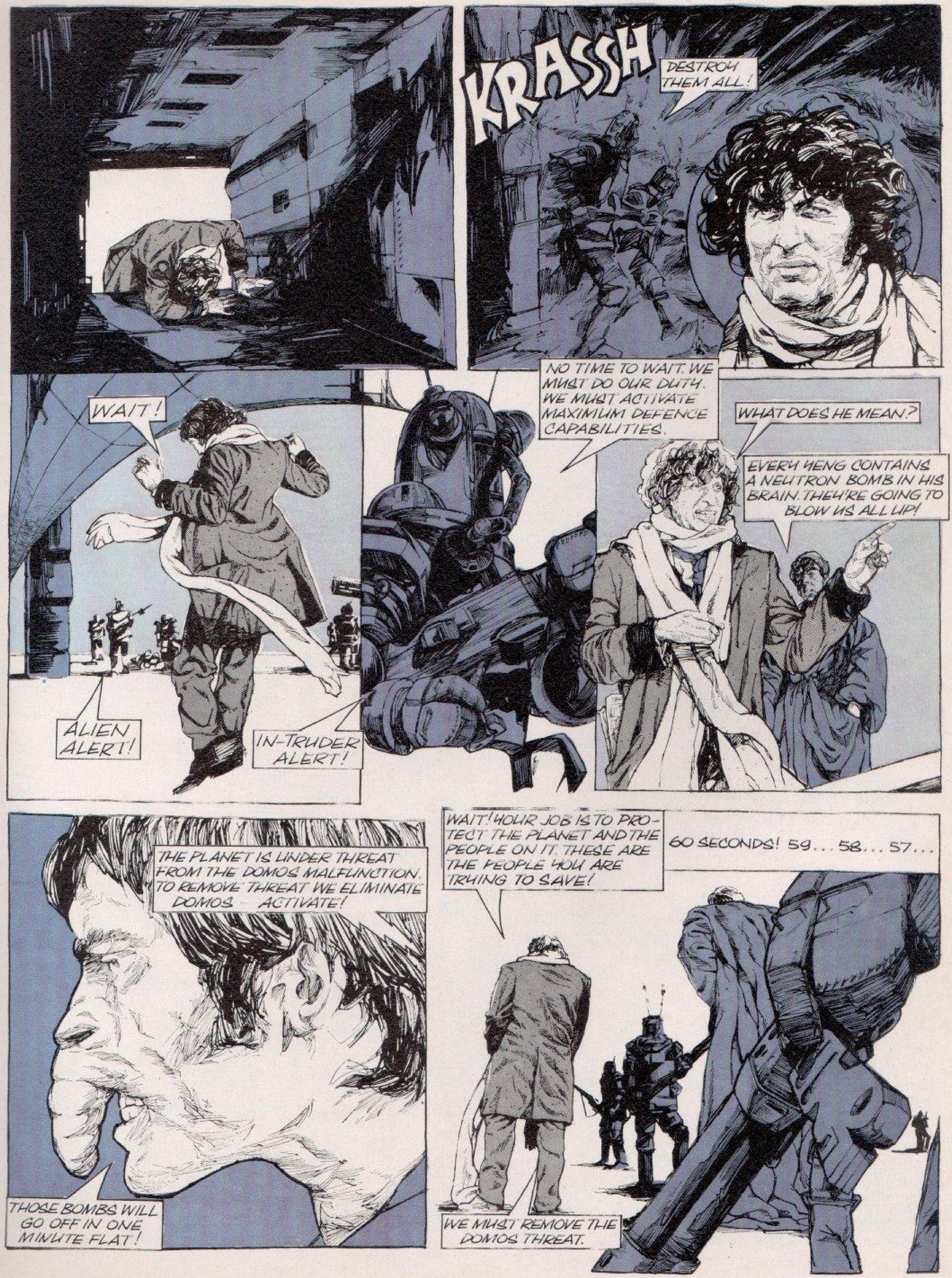
THE RIVAL ROBOTS

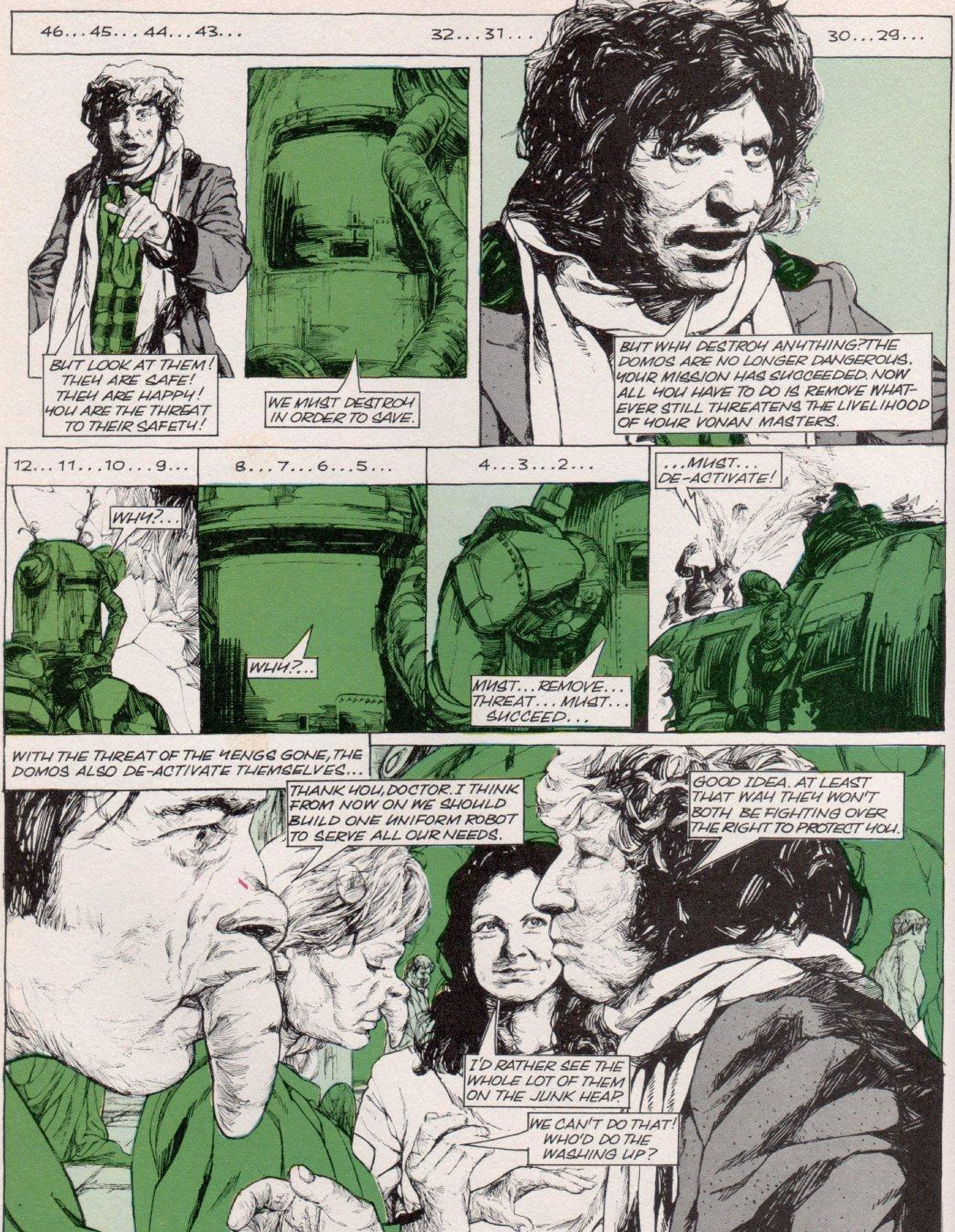

THE TARDIS MATERIALISES ON THE PLANE OF VOG OUTSIDE THE CITY OF RETZ ON THE PLANET VONA...
RIGHT, SARAH, I WANT YOU ON YOUR BEST BEHAVIOUR. UNLIKE THE HUMAN FEMALE THE VONANS ARE VERY SENSITIVE CREATURES.
HUH! I KNOW EXACTLY HOW TO BEHAVE, THANK YOU, DOCTOR.
BUT WHEN SARAH STEPS OUTSIDE.
WHA-?
HELP!
SARAH!
I'LL JUST HAVE TO FOLLOW— EH? WHAT'S THAT?
GOOD GRIEF! IT'S SOME KIND OF METAL INSECT!


IT'S COMING BACK...
JUST ONE CHANCE...
ZZZK-RUNCH!!
PHEW! NOW TO FIND SARAH.
AS THE DOCTOR PASSES SOME CAVES ON THE OUTSKIRTS OF RETZ....
DOCTOR! OVER HERE!
UNH? OLAK! WHAT ON EARTH'S GOING ON?
AFTER THEY EXCHANGE GREETINGS, OLAK EXPLAINS...
SOME MONTHS AGO, A MALFUNCTION IN ONE OF THE DOMOS CAUSED IT TO RUN RIOT IN THE CITY. THE YENGS IMMEDIATELY DESTROYED IT IN AN ATTEMPT TO RESTORE ORDER, BUT A FULL SCALE WAR HAS DEVELOPED BETWEEN THE TWO KINDS OF ROBOTS.
YOU WILL REMEMBER THAT WE ARE SERVED BY THE YENG ROBOTS, WHO CONTROL PLANETARY SECURITY, AND THE DOMOS ROBOTS, WHO ACT AS OUR SERVANTS AND LOOK AFTER US IN OUR HOMES?
INDEED I DO-A MOST SATISFACTORY ARRANGEMENT.


THE DOMOS' LOGIC BANKS TELL THEM THAT ANY NEW ARRIVAL IS A YENG RE-INFORCEMENT.
MM, SO THAT'S WHY THEY SNATCHED SARAH.
DR WHO AND OLAK SET OFF FOR RETZ...
THESE ARE THE TRACKS OF A DOMOS TRANSPORTER.
WE'D BETTER HURRY. LOOKS LIKE THE YENGS ARE GETTING READY FOR AN ALL-OUT ATTACK.
SHE'S PROBABLY IN THAT BUILDING THERE—THE OLD PALACE. THE DOMOS USE IT AS THEIR HQ.
OH-OH, HERE COMES ANOTHER FLYING BEE.
IT'S A YENG ALIEN REPULSER! QUICK! IN HERE!
THANK GOODNESS IT CAN'T GET IN HERE.
THIS AIR VENT MIGHT LEAD STRAIGHT INTO THE ROYAL CHAMBER.

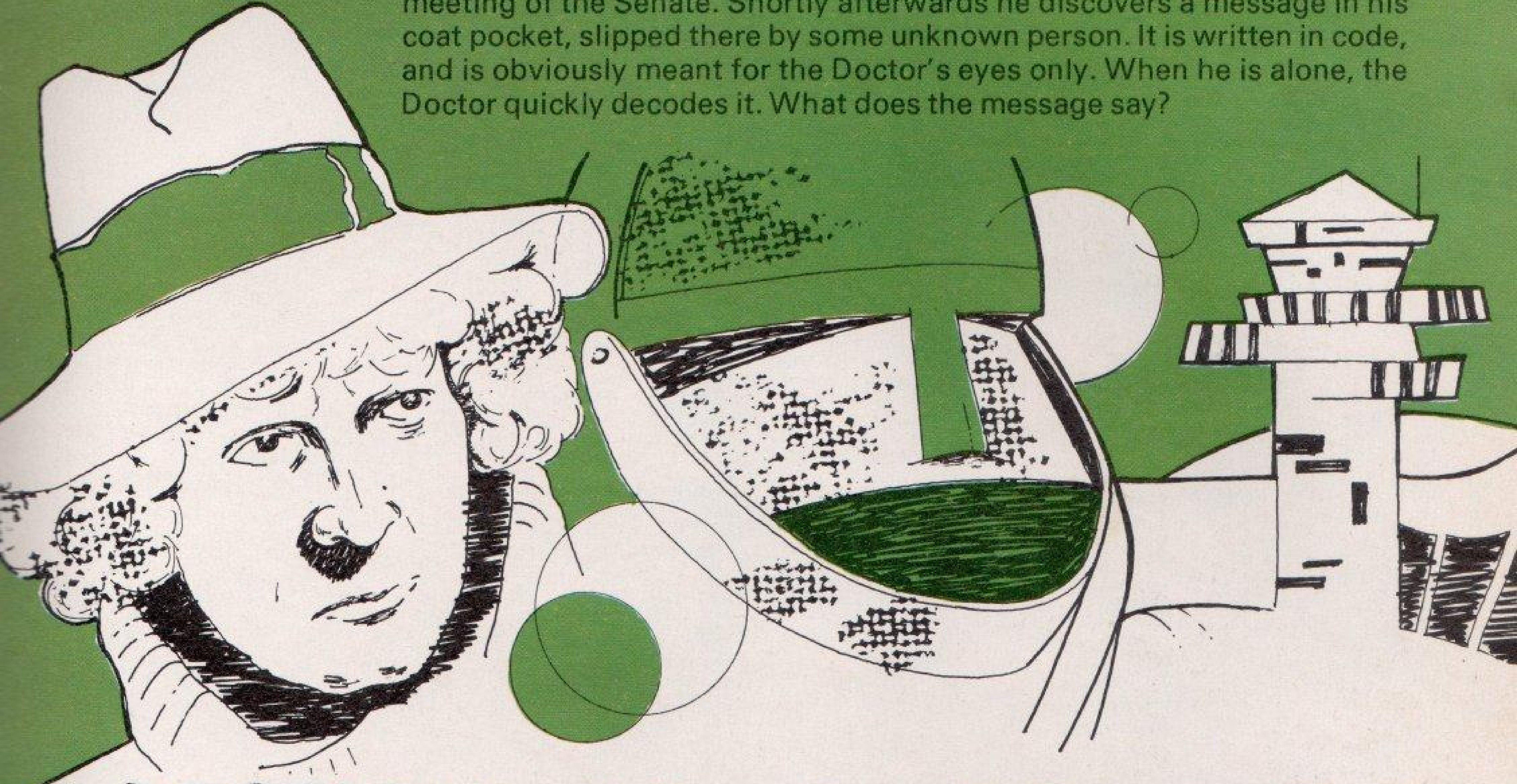

AFTER LONG MINUTES OF CRAWLING.
LOOK AT THAT! EVERYONE SEEMS PERFECTLY HAPPY!
YES, BUT WHERE'S SARAH?
COME ON. FROM THAT NOISE OUTSIDE, I'D SAY THE YENGS HAVE BEGUN THEIR ATTACK.
SARAH!
RIGHT. WHEN I OPEN THE GRILLE, YOU DROP DOWN AND DISTRACT THE GUARD.
IN-TRUDER ALERT!
IN-TRUDER ALERT!
IT'S ALL RIGHT, SARAH. I'M HERE!
IN-TRUDER ALERT!
IN-TRUDER ALER-ICKRRR
RIGHT, LET'S GET OUT OF HERE! IT SOUNDS AS IF THE YENGS HAVE ENTERED THE PALACE.
WE'VE GOT TO TRY AND SAVE THE REST OF MY PEOPLE.

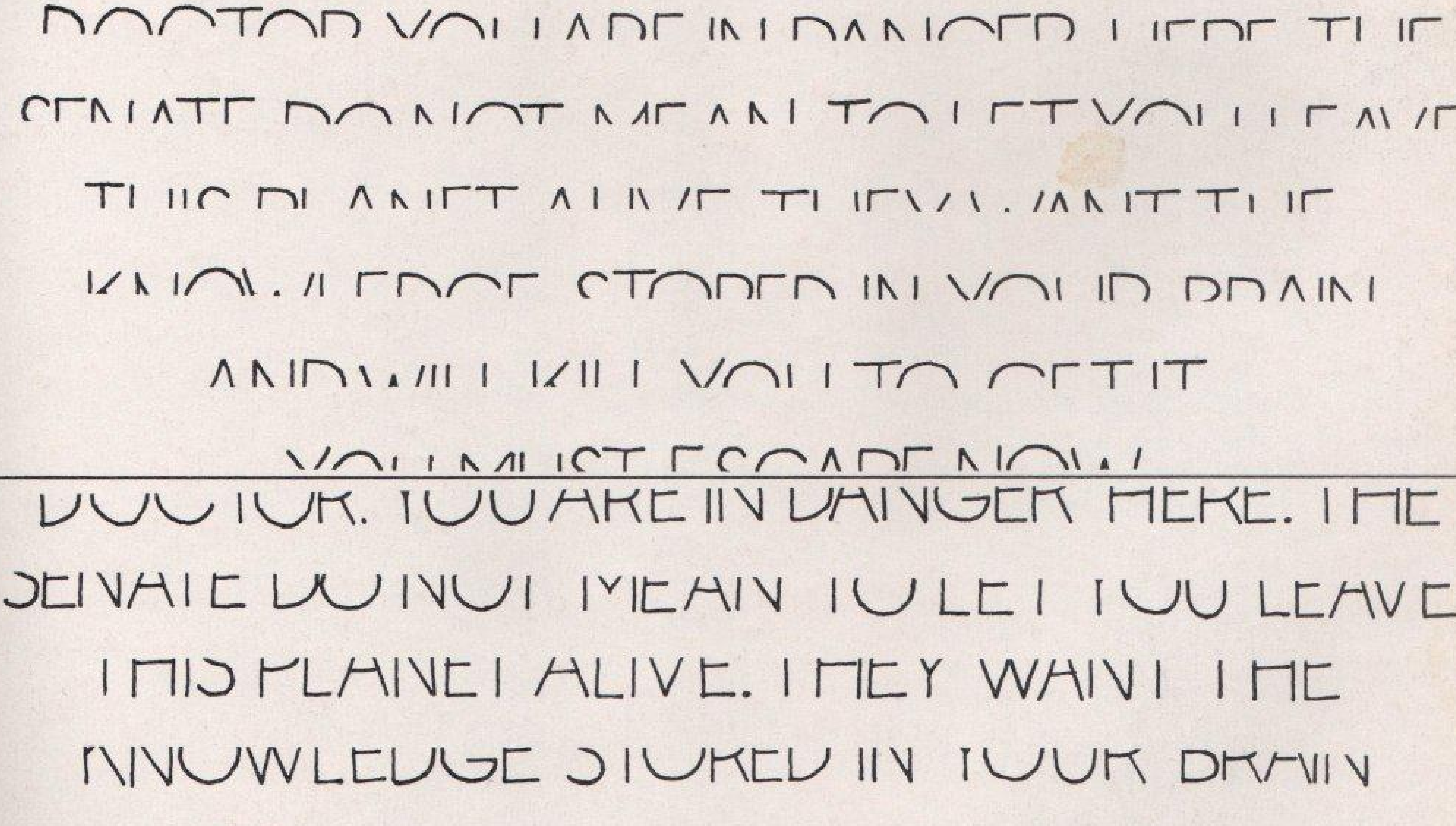

KRASSH
DESTROY THEM ALL!
WAIT!
ALIEN ALERT!
IN-TRUDER ALERT!
NO TIME TO WAIT. WE MUST DO OUR DUTY. WE MUST ACTIVATE MAXIMUM DEFENCE CAPABILITIES.
WHAT DOES HE MEAN?
EVERY YENG CONTAINS A NEUTRON BOMB IN HIS BRAIN. THEY'RE GOING TO BLOW US ALL UP!
THE PLANET IS UNDER THREAT FROM THE DOMOS MALFUNCTION. TO REMOVE THREAT WE ELIMINATE DOMOS — ACTIVATE!
THOSE BOMBS WILL GO OFF IN ONE MINUTE FLAT!
WAIT! YOUR JOB IS TO PROTECT THE PLANET AND THE PEOPLE ON IT. THESE ARE THE PEOPLE YOU ARE TRYING TO SAVE!
60 SECONDS! 59... 58... 57...
WE MUST REMOVE THE DOMOS THREAT.


46... 45... 44... 43...
32... 31...
30... 29...
BUT LOOK AT THEM! THEY ARE SAFE! THEY ARE HAPPY! YOU ARE THE THREAT TO THEIR SAFETY!
WE MUST DESTROY IN ORDER TO SAVE.
BUT WHY DESTROY ANYTHING? THE DOMOS ARE NO LONGER DANGEROUS. YOUR MISSION HAS SUCCEEDED. NOW ALL YOU HAVE TO DO IS REMOVE WHATEVER STILL THREATENS THE LIVELIHOOD OF YOUR VONAN MASTERS.
12... 11... 10... 9...
WHY?...
8... 7... 6... 5...
WHY?...
4... 3... 2...
MUST... REMOVE... THREAT... MUST... SUCCEED...
...MUST... DE-ACTIVATE!
WITH THE THREAT OF THE YENGS GONE, THE DOMOS ALSO DE-ACTIVATE THEMSELVES...
THANK YOU, DOCTOR. I THINK FROM NOW ON WE SHOULD BUILD ONE UNIFORM ROBOT TO SERVE ALL OUR NEEDS.
GOOD IDEA. AT LEAST THAT WAY THEY WON'T BOTH BE FIGHTING OVER THE RIGHT TO PROTECT YOU.
I'D RATHER SEE THE WHOLE LOT OF THEM ON THE JUNK HEAP.
WE CAN'T DO THAT! WHO'D DO THE WASHING UP?

MYSTERY MESSAGE

While visiting the planet of Penadron, the Doctor is asked to attend a meeting of the Senate. Shortly afterwards he discovers a message in his coat pocket, slipped there by some unknown person. It is written in code, and is obviously meant for the Doctor's eyes only. When he is alone, the Doctor quickly decodes it. What does the message say?

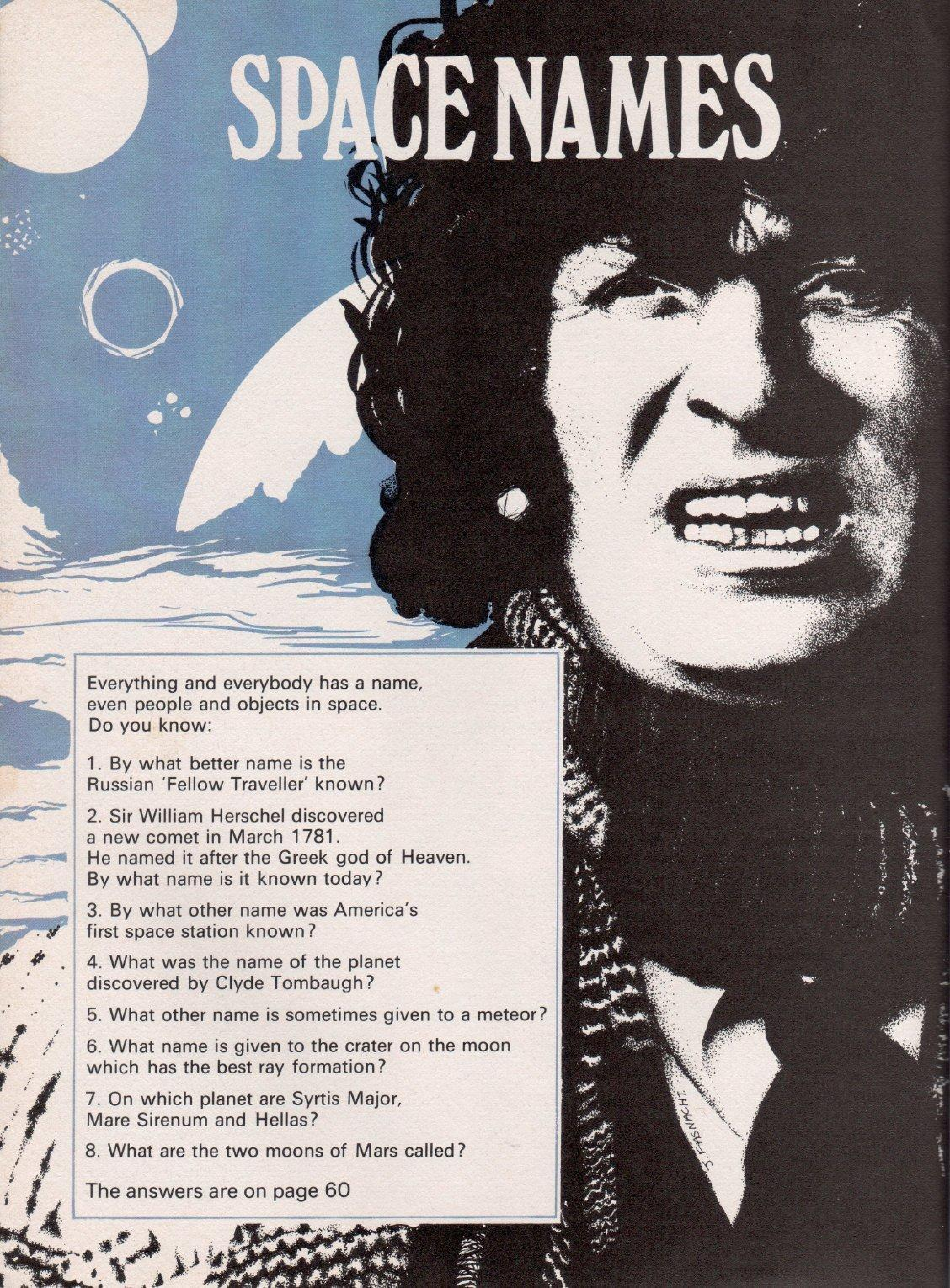




DOCTOR. YOU ARE IN DANGER HERE. THE SENATE DO NOT MEAN TO LET YOU LEAVE THIS PLANET ALIVE. THEY WANT THE KNOWLEDGE STORED IN YOUR BRAIN AND WILL KILL YOU TO GET IT. YOU MUST ESCAPE NOW.

Turn to page 60 for the key to the code.

SPACE NAMES



Everything and everybody has a name,
even people and objects in space.
Do you know:

1. By what better name is the Russian 'Fellow Traveller' known?
2. Sir William Herschel discovered a new comet in March 1781. He named it after the Greek god of Heaven. By what name is it known today?
3. By what other name was America's first space station known?
4. What was the name of the planet discovered by Clyde Tombaugh?
5. What other name is sometimes given to a meteor?
6. What name is given to the crater on the moon which has the best ray formation?
7. On which planet are Syrtis Major, Mare Sirenum and Hellas?
8. What are the two moons of Mars called?

The answers are on page 60

A NEW LIFE

'If I have to spend another hour cooped up in here with you I shall go mad!' announced Sarah, after yet another of the Doctor's jokes had failed to raise even a smile.

'Oh, come now, it wasn't that bad, was it?' grinned the Doctor. 'You are just feeling a bit tense after the long journey, that's all.'

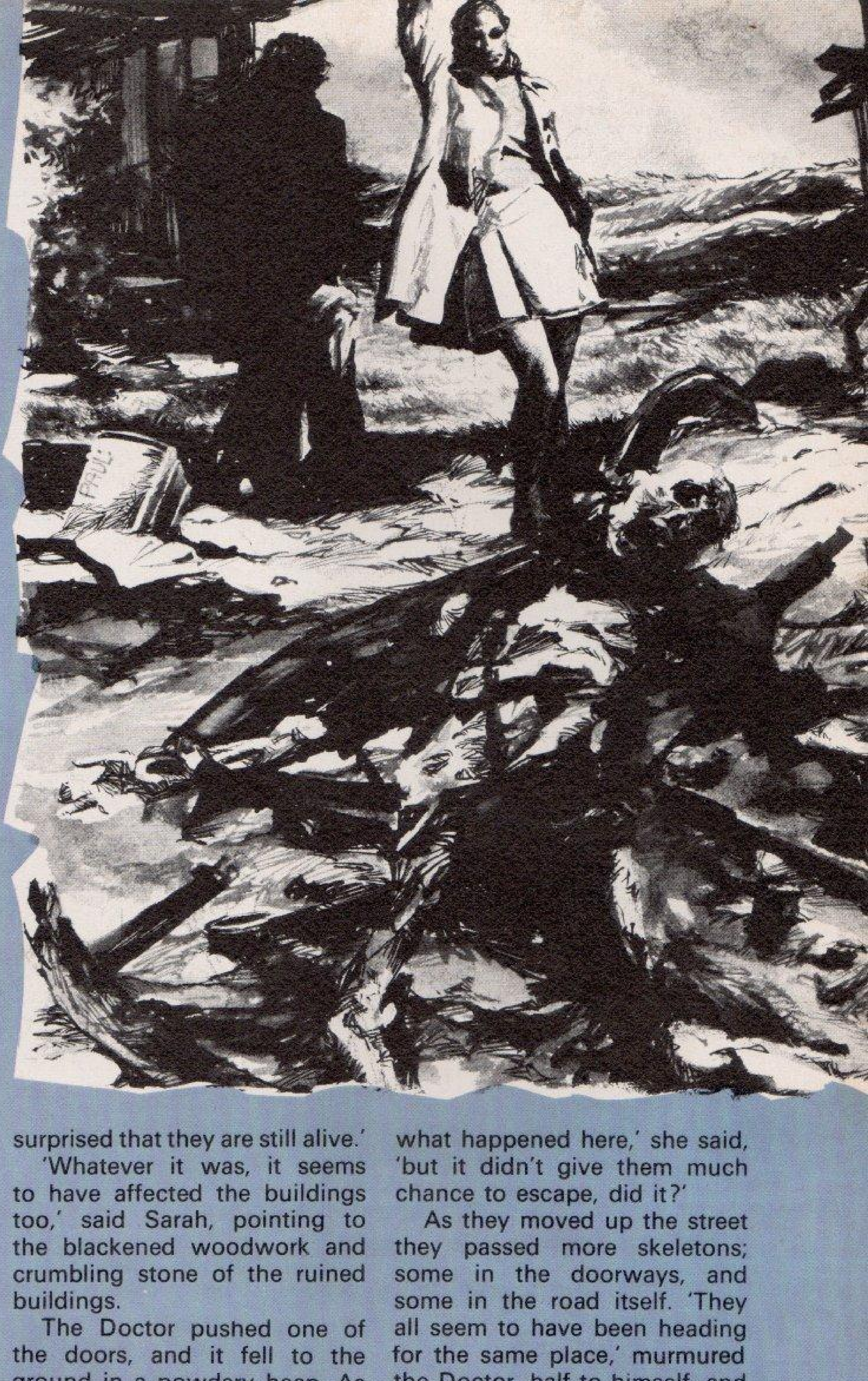
'Well, if that's the case, how about giving us both a break, and finding somewhere to land?'

'No sooner said than done!' said the Doctor briskly, and he slid the controls of the Tardis into position. The familiar sound filled the room as the Tardis began to materialise, and Sarah watched the scanner with a mixture of relief and apprehension.

'Well, what do you think?'

'It *looks* safe enough . . .' ventured Sarah cautiously, and the Doctor nodded.

'Come on then,' he said, tugging at his scarf. 'Let's take a walk.' And with that he opened the door of the Tardis and stepped out.



At first sight the landscape looked quite normal. They were on the outskirts of a town, with trees, flowers, and a small stream running nearby. However, as they looked closer, they saw that the plants were strangely twisted, and the tree trunks were blackened and distorted beneath the new foliage.

'Hmm, it looks to me as if these plants are just starting to grow again after some kind of blight,' remarked the Doctor as they wandered along. He bent down to examine some blackened roots. 'Correction. They have been attacked by some kind of chemical – in fact I'm surprised that they are still alive.'

'Whatever it was, it seems to have affected the buildings too,' said Sarah, pointing to the blackened woodwork and crumbling stone of the ruined buildings.

The Doctor pushed one of the doors, and it fell to the ground in a powdery heap. As he stepped inside, his feet caught on something and, looking down, he stiffened. There, on the dusty floor, lay a skeleton, its arms outstretched as if to protect the two small skeletons beneath them.

Sarah had followed him into the house, and at the sight of the pathetic heap of bones she shuddered. 'I don't know what happened here,' she said, 'but it didn't give them much chance to escape, did it?'

As they moved up the street they passed more skeletons; some in the doorways, and some in the road itself. 'They all seem to have been heading for the same place,' murmured the Doctor, half to himself, and following the line of outstretched arms, he came to what looked like a manhole, long rusted over, and barely distinguishable in the dusty road.

'If I read your mind correctly, I would say that you want to open that manhole, and see where it leads.'

The Doctor turned a face of studied innocence towards his assistant. 'Whatever gave you that idea?' he said, and then spoiled the effect by grinning. 'Now that you mention it though, we might find a clue down there. Are you game?'

Sarah grimaced and then nodded, so they set about prising open the top of the manhole. This wasn't difficult, as the metal had corroded and the hinges had crumbled away.

'I'll go second if you don't mind,' said Sarah, looking with some misgivings at the dark hole at her feet. So the Doctor stepped down.

'I hope this ladder is stronger than the lid,' he remarked, putting his foot gingerly on the first rung. Fortunately it was, and soon the two of them were climbing down into the darkness. After several minutes, the Doctor found himself on solid ground, and taking his small torch from his pocket he shone it round his feet.

'Careful now!' he warned Sarah as she stepped down beside him. 'It isn't very wide here, and there seems to be a river running under us.'

The thin beam of the torch showed them to be in a niche in the wall of a tunnel, and as it flickered over the black water below them, Sarah spotted something bobbing against the side of the tunnel.

It was a boat, and by lying on his stomach, the Doctor was able to pull it over to them. There were no oars, so they had to rely on the current, which swept them along the damp, dark tunnel at surprising speed.

'It seems to be getting lighter up ahead,' remarked the Doctor, and his voice bounced eerily back from the dripping walls. 'Look, there are torches all the way along here. I wonder who . . .'

'Doctor! Look!'

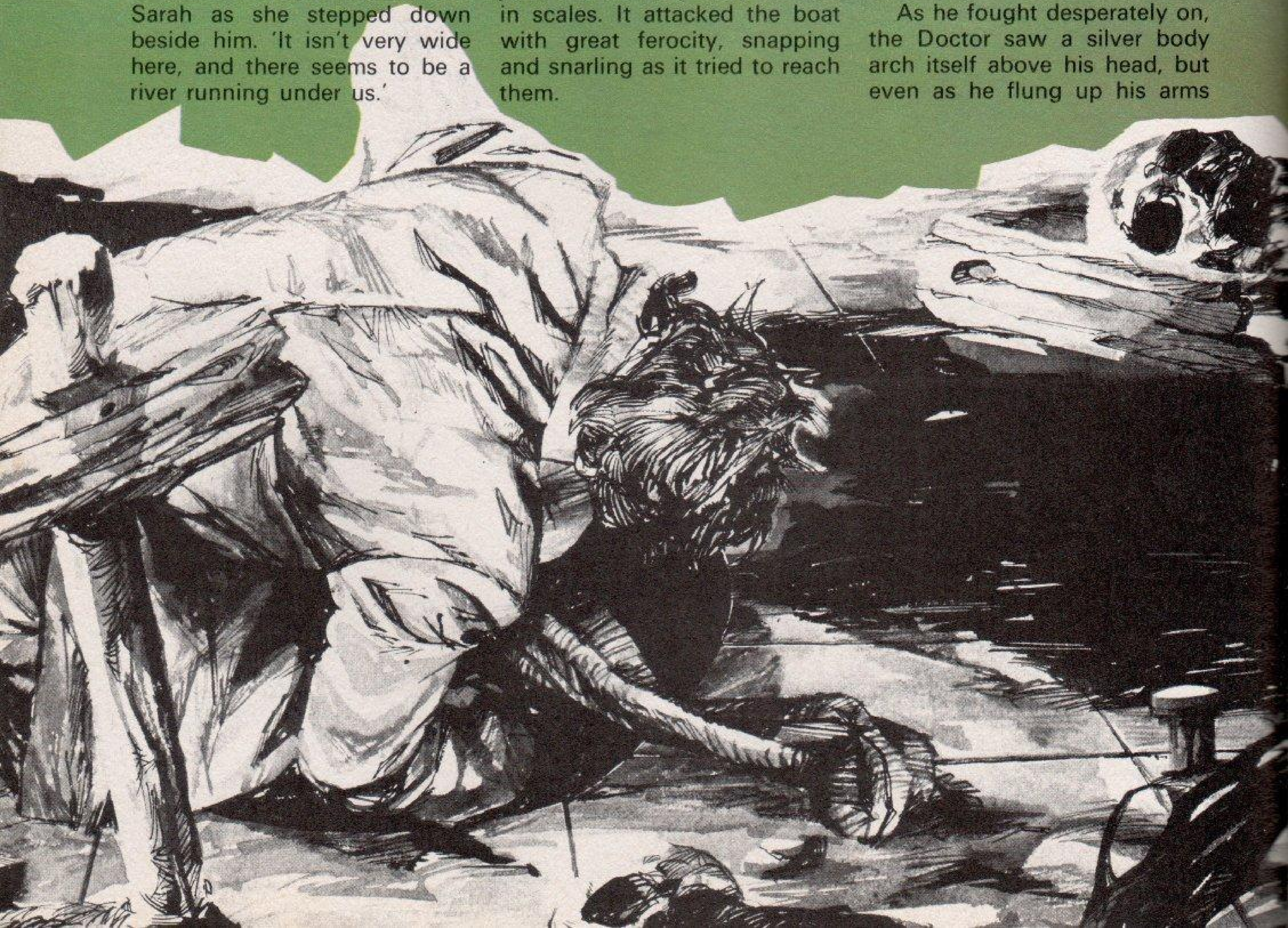
Something was swimming towards them. There was a flurry of water as it broke the surface, and Sarah screamed. The 'something' was about the size of a dog, with huge gaping jaws and a silvery body covered in scales. It attacked the boat with great ferocity, snapping and snarling as it tried to reach them.

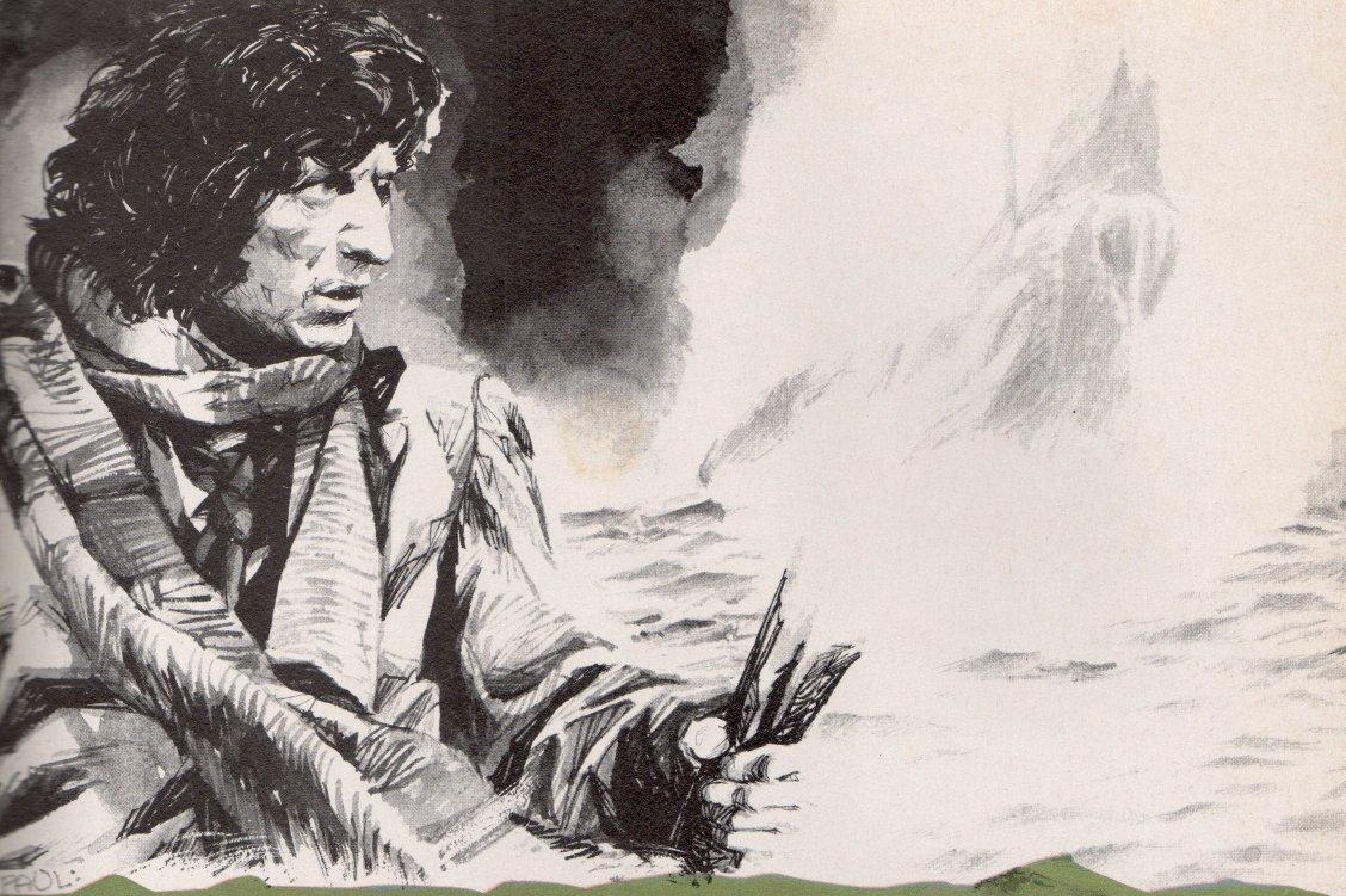
'It's trying to capsize us!' cried Sarah, clutching the sides of the boat. Then she gasped in amazement. 'Doctor, what on earth are you doing?'

The Doctor was standing up in the rocking boat, and as the current swept them along, he reached up and grabbed one of the burning torches. 'Look out!' he shouted. 'Here come the rest of the family!' He thrust the torch into the face of the first of the approaching creatures, and it fell back into the water with a blood-curdling cry, causing momentary confusion and giving the Doctor a chance to snatch another torch for Sarah.

By now the creatures had resumed their attack, and although the Doctor and Sarah did their best to keep them at bay, the boat was now rocking so much that they knew that it wouldn't be long before the creatures succeeded in overturning it.

As he fought desperately on, the Doctor saw a silver body arch itself above his head, but even as he flung up his arms





to defend himself something hissed past his ear and the creature fell back into the water, a black spear through its chest.

'Get down!' he shouted to Sarah, as a hail of spears fell all around the boat. Within seconds, the bodies of their attackers lay scattered across the tunnel.

As soon as it was safe to move, the Doctor got up to thank their rescuers, only to be met by two stern white faces and two more spears, this time pointing at himself and Sarah.

'Oh, come now, you haven't saved our lives just so that you can kill us yourselves, have you?' said the Doctor pleasantly.

But the tall pale figure simply prodded him with the spear and said, 'You will come with us. You must explain yourselves to Matahn and Jometh. It is for them to decide whether or not you will die.'

As they stepped into the other boat, the Doctor gave Sarah a lopsided grin. 'Out of the frying pan, into the fire, eh?'

But she was too tired, and too frightened to respond, and she dropped dejectedly into a corner of the boat. There was some delay while their captors piled the silver bodies into the boat, and then they set off.

When they finally arrived at the settlement of these pale-skinned people, the Doctor and Sarah were taken immediately to a long, low-ceilinged room, and told to wait. However, it wasn't long before the door opened again, and they were told to prepare themselves . . . they were about to be questioned.

The Doctor had been wondering why there should be two leaders, and now he understood. Matahn and Jometh were twins – identical twins. They were also very old, although they held themselves proudly erect and, like the rest of their people, their skin was almost colourless.

Two pairs of identical blue eyes stared at the weary travellers in time. 'We do not know you,' said Matahn at last. 'Who has sent you to spy on us? Is it that thieving scoundrel, Bohar?'

The Doctor was startled at this accusation. 'We are not spies,' he began. 'We are travellers in time, and we landed here quite by accident. I can assure you that we mean no harm.'

'Ha!' exclaimed Jometh. 'Are you trying to tell us that you have come from the surface?' He turned triumphantly to his brother. 'That proves that he is lying. No one can go to the surface and survive!'

Slowly, realisation dawned on the Doctor. 'Listen to me,' he said urgently, 'whatever it was that killed all those people up there, it has gone now. The plants are beginning to grow again, and the air is safe to breathe.'

'You lie!' said Matahn angrily. 'You are trying to trick us into leaving our settlement so that your people can take it over. Guards! Take them away and deal with them!'

'No!' shouted Sarah as they were led away. 'He's telling the truth – we are friends . . .'

But she was wasting her breath. She and the Doctor were taken back to the river, where they were chained to the wall of the tunnel, up to their waists in the cold dark water.

'Doctor, I'm scared!' said Sarah through chattering teeth. 'If those . . . those things don't get us first, we'll freeze to death!'

'Worse than that,' added the Doctor, 'my scarf will be ruined!'

In spite of herself, Sarah had to smile. 'Tell me a joke,' she said. 'It doesn't have to be very funny, just as long as it keeps my mind off our predicament.'

'I thought we came here because you were sick of my jokes!' retorted the Doctor. 'You women just don't know your own minds, that's your trouble!'

'If you hadn't opened that manhole,' snorted Sarah, 'we wouldn't be in this mess at all!'

'*Shhh*! What's that noise?'

'Oh Doctor, it's those creatures – they're coming this way! What are we going to do?'

The Doctor was saved from replying by the arrival, not of the silvery monsters, but of a small boat containing one of their original captors. Without a word he unfastened their chains and helped them into the boat.

'What's going on?' asked the Doctor. 'This is the second time you have saved us – have your leaders relented?'

'Please keep your voice down,' whispered their rescuer, looking over his shoulder in alarm. 'No one knows that I am doing this. My name is Barda, and I was impressed by your story back there. I think that you were telling the truth, and I am going to give you the chance to prove it.

'Matahn and Jometh have been good leaders, but they are old and set in their ways. Also, they lived on the surface when they were young men, and they saw the terrible effects of the yellow cloud.'

'So that's what it was,' said the Doctor, 'a cloud of yellow gas which killed everything in its path.'

'Yes indeed,' nodded Barda, 'and very few people managed to escape, as it appeared without warning. The ones who did made a new life for themselves down here, and since then no one has ever tried to go up to the surface again.'

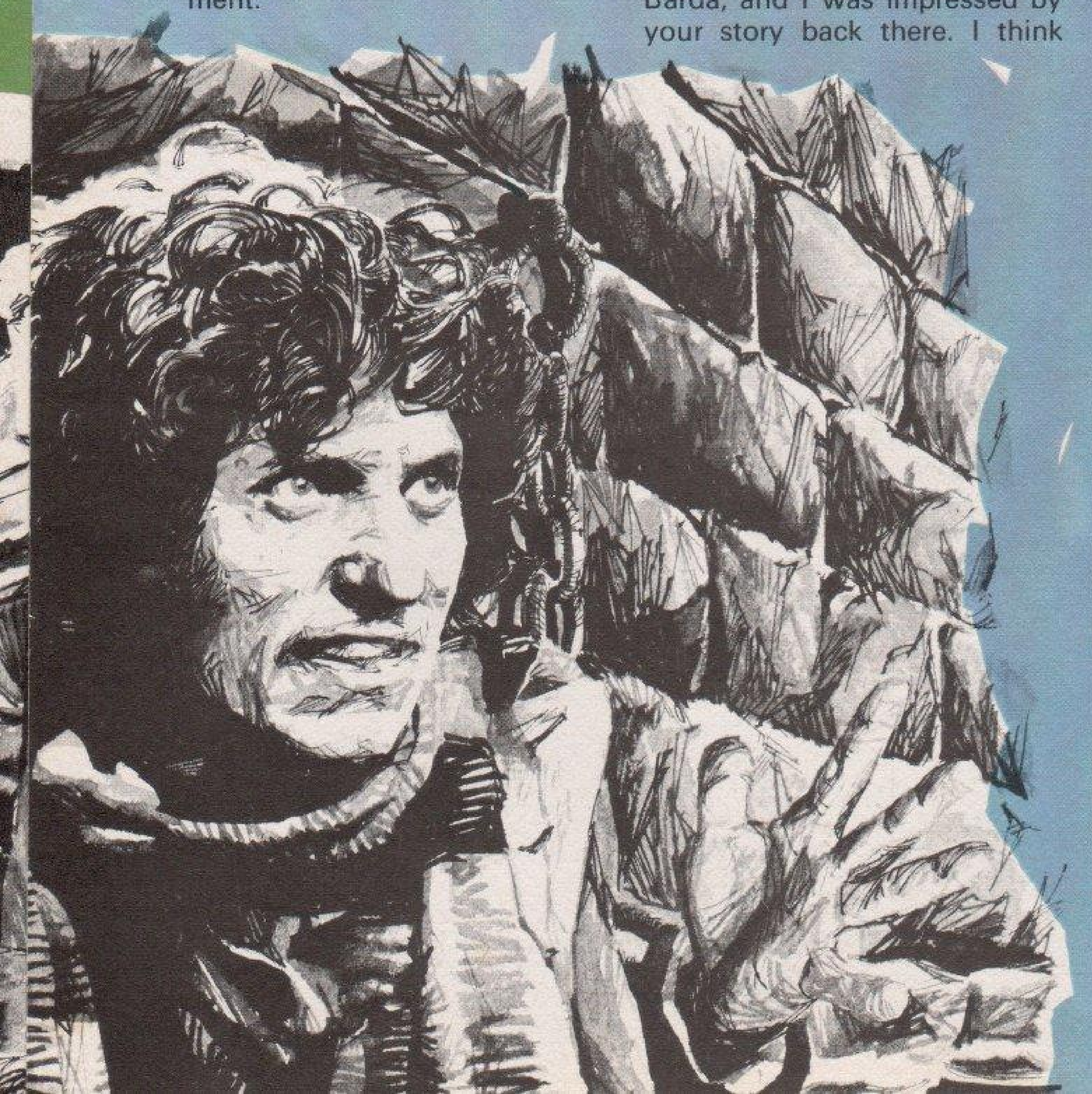
They had reached the foot of the ladder and, seeing that Barda was looking nervous, the Doctor said reassuringly, 'Don't worry, I'll go up first.'

At this, Barda squared his shoulders and said firmly, 'I am not afraid. I shall go first.' As he disappeared up the shaft, the Doctor winked at Sarah, before putting his foot on the rung.

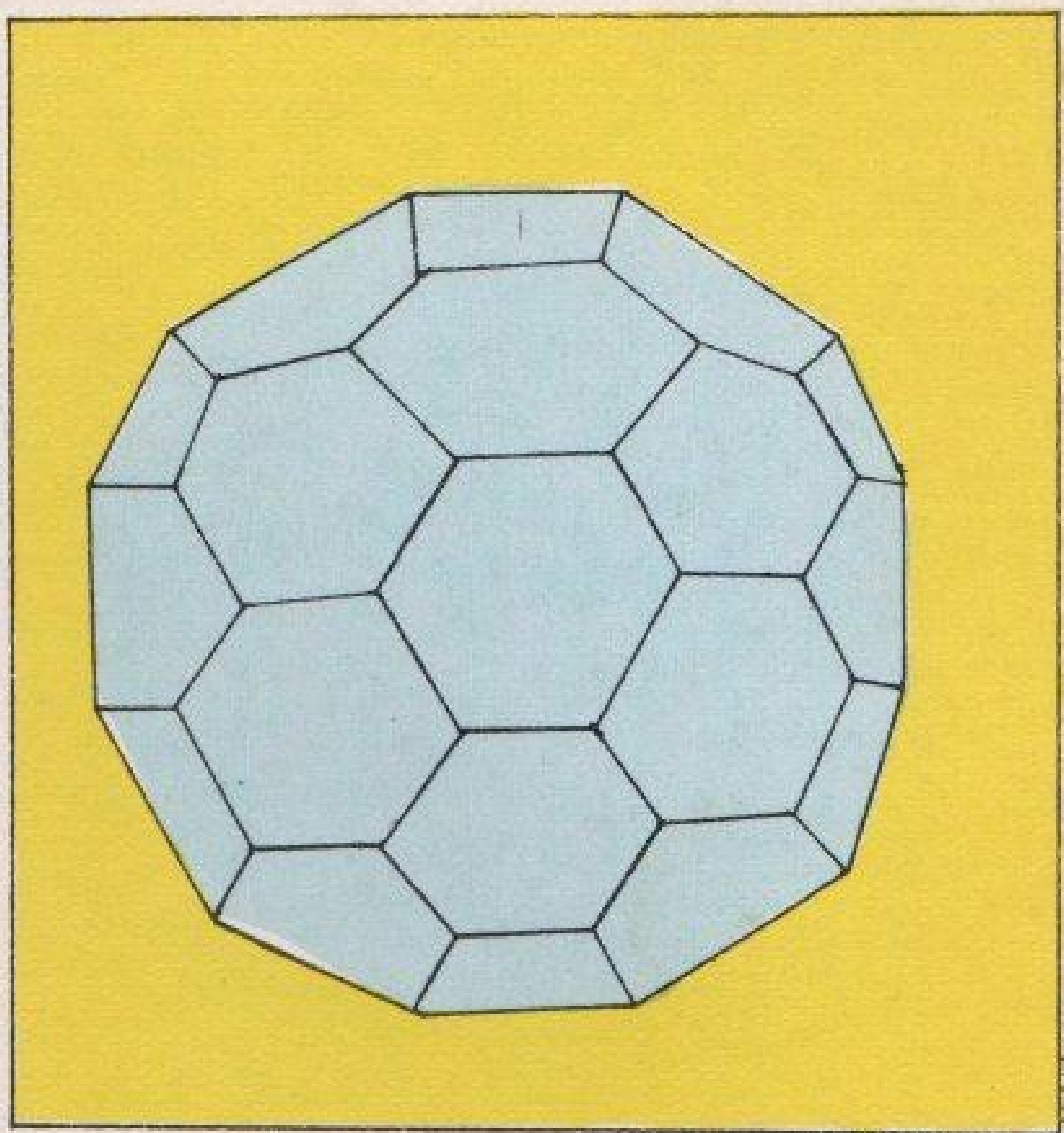
'Excuse me,' said Sarah, 'but there is an ancient earth custom that says "ladies first".' And she curtseyed as he stepped back to let her pass.

As her head cleared the top of the shaft, she caught sight of Barda, a rapt expression on his face as he breathed in the sweet fresh air, and felt the sun on his skin for the first time. The remains of his ancestors lay at his feet, but his head was full of this wonderful world of light and space, and he had completely forgotten his two companions.

Motioning to the Doctor to be quiet, Sarah pointed to the Tardis, and he nodded. As quickly and quietly as they could, they retraced their steps through the ruined town, knowing that before long it would once again be teeming with life.



The Life Crystal



The Doctor was taking ten members of the Salemian council for a voyage in the Tardis when he was mysteriously forced down onto the planet Okran. The eleven have all put on protective suits to shield them from the deadly Okran radiation, but they know that it is not enough to save them. The Doctor has estimated that repairs to the Tardis will take three days. The protective suits have a lifespan of sixteen hours. The only known way of counteracting Okran radiation is by wearing a Dilunium crystal next to the skin. The size of the crystal does not matter – any amount of Dilunium in contact with the skin protects the wearer from the effects of radiation – but the Doctor and his friends have only one crystal between them.

The answer is to divide the Dilunium crystal – but how? The one operational laser-cutter they have is capable of only four straight cuts before it runs out completely. Already the Okran rays are beginning to penetrate their suits. How many of them can be saved? Which ones must be left to die? The Doctor has to work quickly. What would you do in a similar situation?

In fact, all the members of the Salemian council can be saved, as can the Doctor. The Dilunium crystal can be divided into eleven pieces with just four straight cuts with the laser-cutter.

Turn to page 60 to check your answer

Merry Dancers of the Skies

One of the strangest, most beautiful and astonishing sights you are ever likely to see is the phenomenon the Scots used to call the *Merry Dancers* – Aurora Borealis.

The natural spectacle is more commonly known as the Northern Lights, and is usually seen only by people living in or very close to the Arctic Circle. This magnificent display usually begins before midnight with a glow far down in the sky. Soon curved bands begin to appear above the glow, and beams begin to shoot upwards towards the middle of the sky. The beams continually change their brilliance and intensity, and at its height the aurora covers the whole visible sky with shifting 'curtains' of many-coloured lights, waving like flimsy cloth in a soft breeze.

And this magnificent display isn't on a small scale – no aurora of less than 70 kilometres in height has ever been recorded, and the highest recorded altitude in modern times is one of 1,000 kilometres!

These marvellous natural displays aren't confined to the Northern Hemisphere, for in the Antarctic there is a counterpart, Aurora Australis, the Southern Lights, which were first recorded by Captain Cook as he sailed on his voyage of discovery.

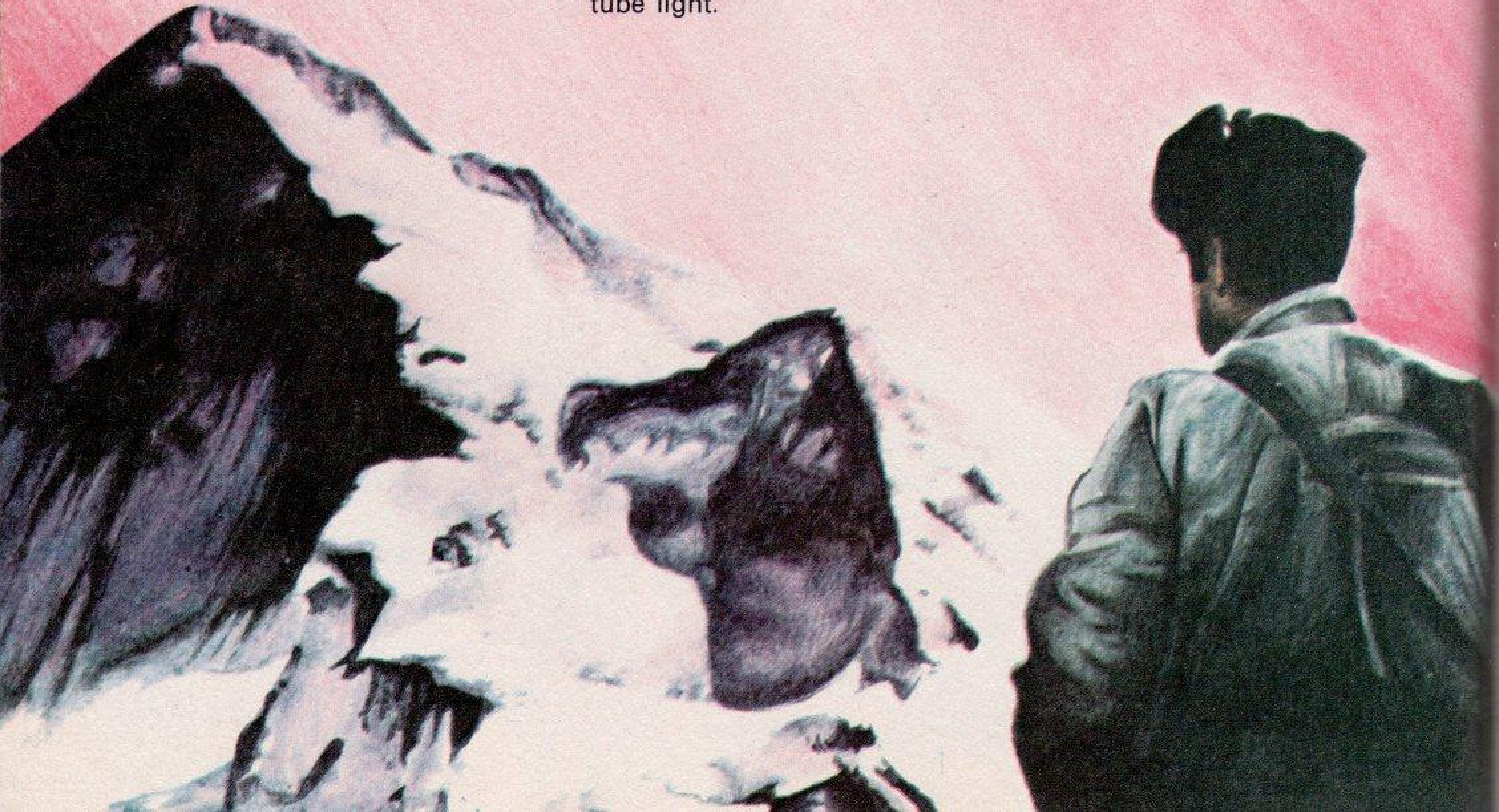
We know that these are natural phenomena, but what causes them? It was at one time believed that they were caused by reflection of the sun's rays by the snow and ice which cover the North and South poles, but this is incorrect: they are actually caused by electrical discharges.

The sun releases streams of electrically charged particles, which invade the upper atmosphere, diverting to the Earth's magnetic poles. The particles collide with gases in the atmosphere and change their electrical charge. The particles discharge electrons, and this produces light, in the form of a glow which is much the same as that caused by the charged particles of a fluorescent tube light.

This explanation is almost certainly the correct one, for there is a constant discharge of matter from the sun – the ultimate source of all our energy – and the aurora displays are more frequent and intense when there is greater activity on the sun's surface.

There have, in fact, been instances of man-made aurorae, but these have not been caused intentionally. High altitude atomic tests over the Pacific in the late 1950s produced aurorae, one of which was visible at a distance of 3,200 kilometres!

This great natural sky-spectacular may be explained by science, but it remains one of the natural wonders of the world, and one that man will marvel at for centuries to come.



SCIENCE LENDS A HAND

The Doctor is always delighted to learn of ways in which scientists use their skills to help solve ordinary everyday problems . . . although some of these problems are rather extraordinary!

BEE STILL!

Little did the farmers of certain states in America realise that they would anger and cause quite a problem to local bee-keepers when the farmers started to spray their crops with a new pest control insecticide.

Apparently the insecticide also killed off the bees, and as the farmers found this new way of pest control ideal they were reluctant to stop using it, so that scientists were asked for their help in solving the problem.

The solution was finally found when it was discovered that bees never left their hives while the queen bee 'piped' her wings. So the scientists fitted all the hives with a device which reproduced exactly the noise made by the queen bee when she vibrates her wings.

As a result, the bees stayed safely inside their hives while the farmers sprayed their crops and everyone, farmers, bee-keepers, and especially the bees, were kept very happy . . . thanks once again to the wonders of science.

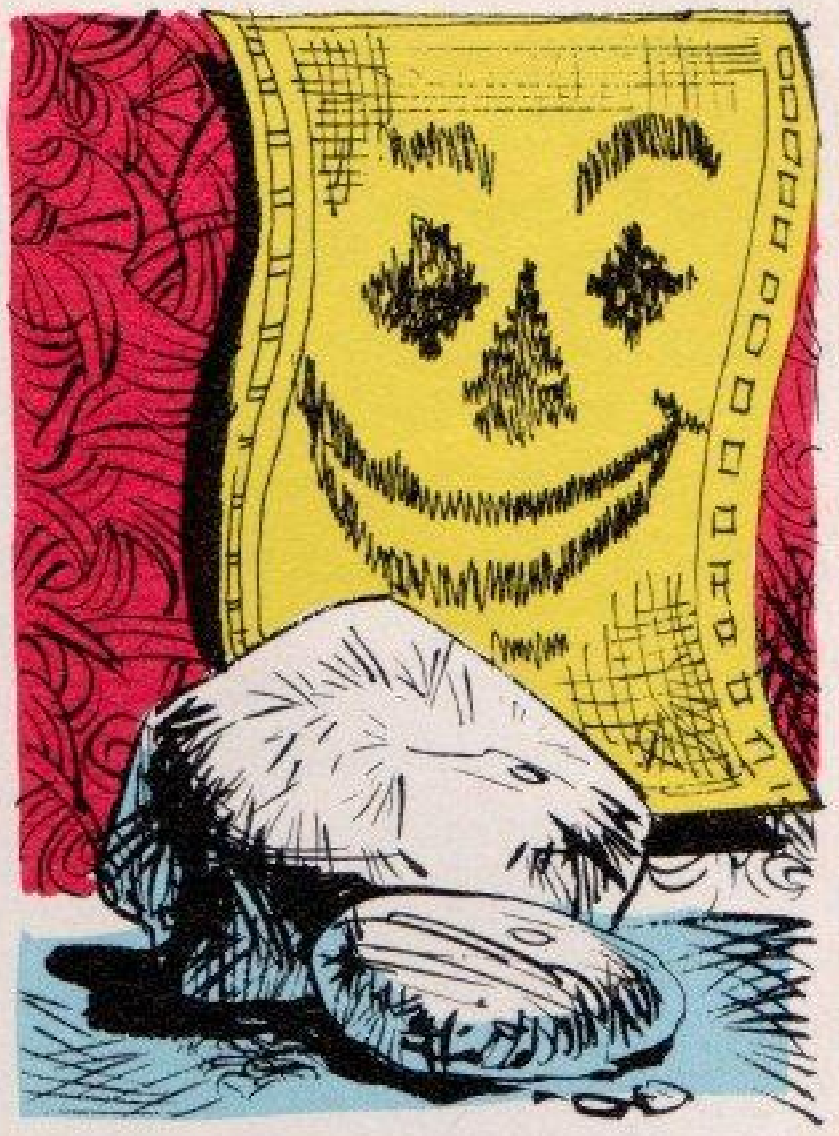
THE SPEAKING LAUNDRY ROBOT

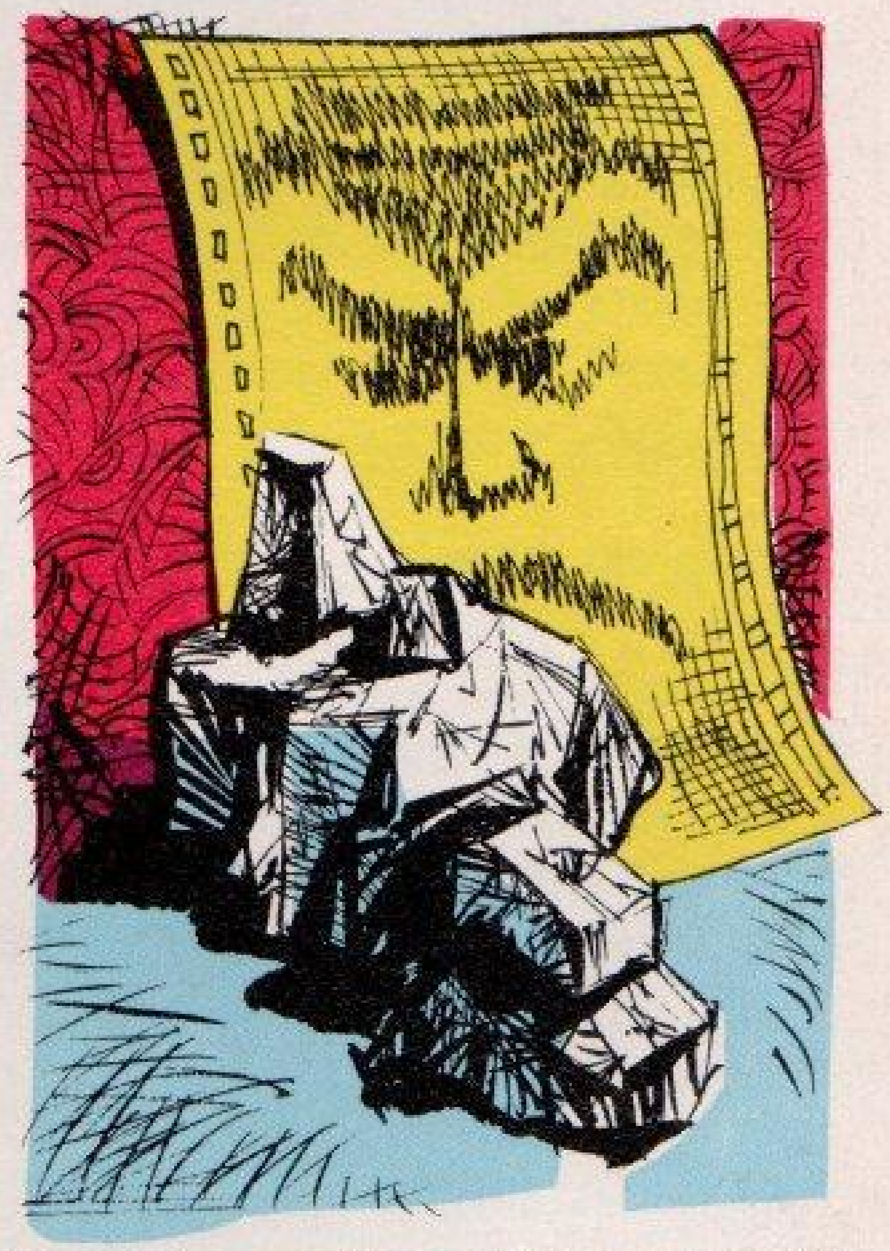
Any mother or schoolchild who has had to sew name tapes onto various articles of clothing for the purpose of identification, will quickly realise just how valuable is the robot invented by British electronic engineers which names the customer and registers his name and address on tape when the article needing washing is fed into a machine. It also prints out the bills for all the customers!

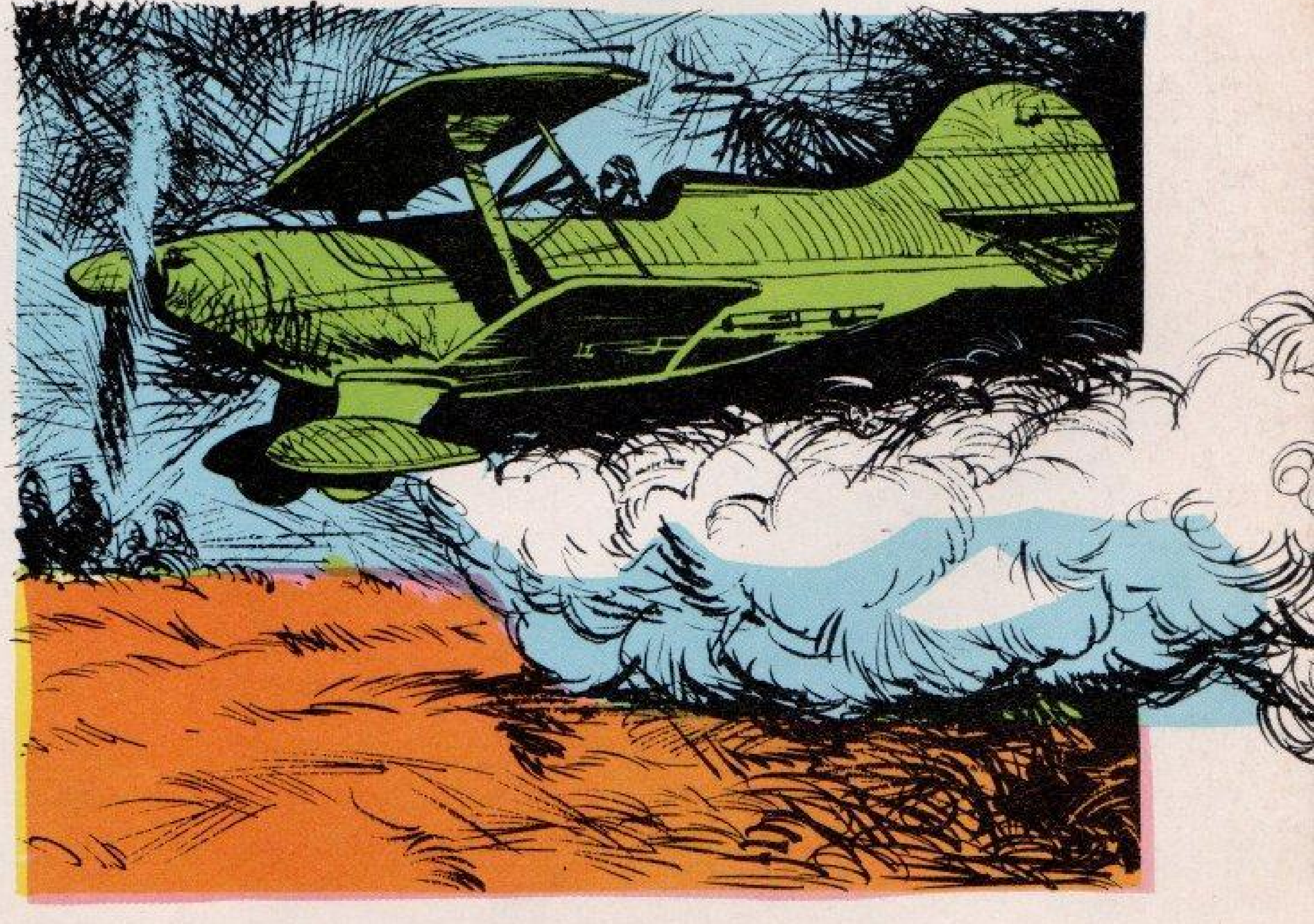
FUNNY FACES

Not all scientists are serious, some of them use their technical knowledge in an amusing way to help the progress of science.

One of these is a Californian University professor named Chernoff who fed data into a computer which then turned this information into a series of funny faces! Each face represented the various amounts of different materials in certain rock foundations. The professor maintained that students and other scientists could remember the shape of these funny faces better than a long string of numbers!







DR WHO ALPHABET

Sometimes, when the Doctor and his friends are in a tight corner as danger threatens, the Doctor tries to keep their minds occupied by other matters, and he passes the time telling them of the many strange people, places and things he has seen as he travels through space to many strange planets . . . and even the oddities he has occasionally seen on our earth!

A is for Astronauts

Among the many astronauts the Doctor has seen in their space ships are Yuri Gagarin and Neil Armstrong. The first, a Russian, was the first man in space, while the latter, from the USA, was the first man to step on the moon!

B is for Baily's Beads

Although this phenomenon – whereby the disc of the moon during an eclipse reduces the sun to a crescent of beads, because the sun shines through the depressions between lunar mountains – gets its name from the man who saw it first in the mid-nineteenth century, the Doctor had, of course, seen it many times before!

C is for Cacus

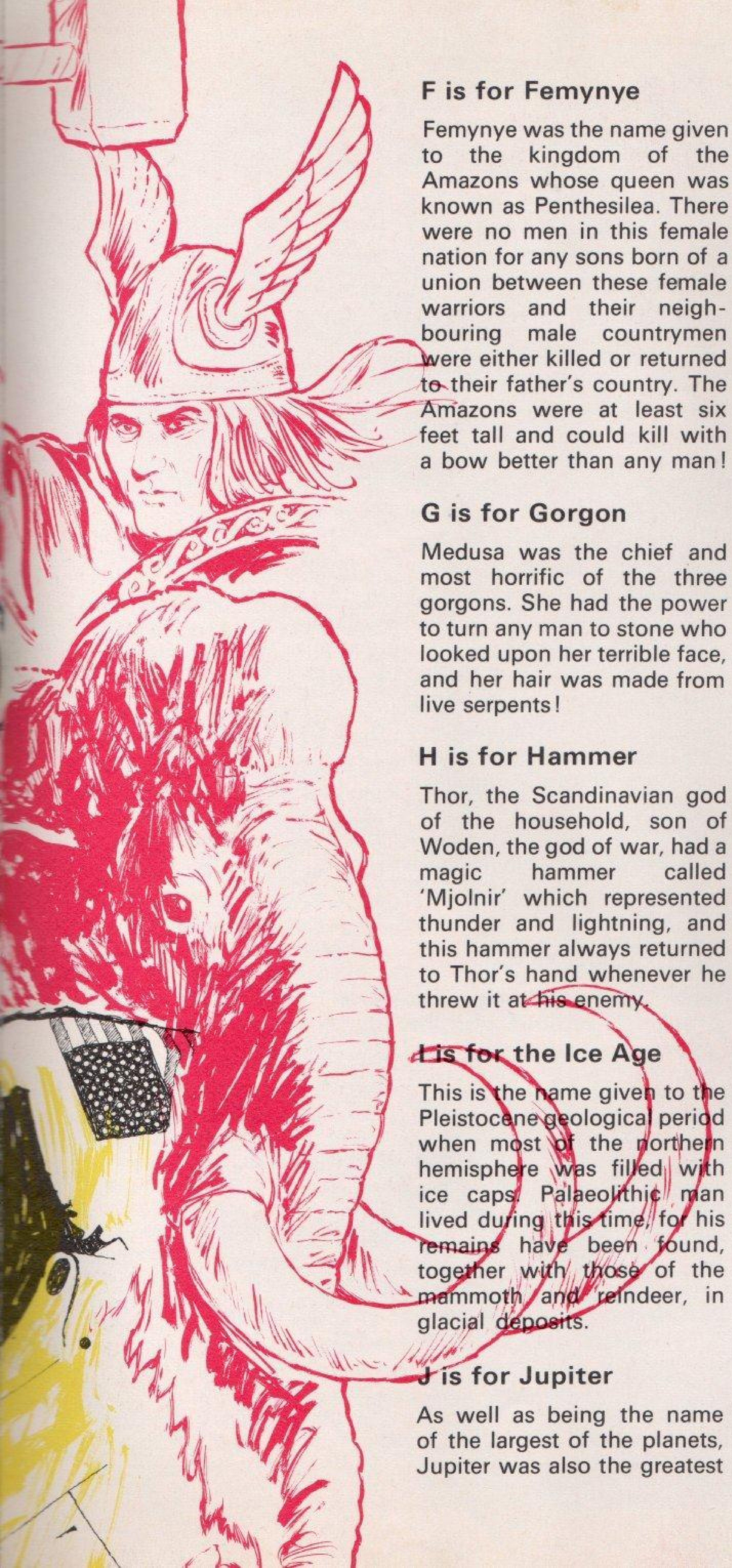
Cacus was the son of Vulcan, and had an easy task robbing people of their wealth because they were so terrified of his appearance. Cacus had three heads which spitted out flames as he spoke!

D is for the Dancing Dervishes

The Dervishes are the Mawlawis, members of a religious Moslem sect that chant and whirl around with their eyes shut, until at last they collapse, exhausted, upon the ground!

E is for Exploration

The Doctor remembers the first scientific paper produced at the turn of the last century by a Russian schoolteacher, Konstantin Tsiolkovsky, on the use of rockets for space flight. 'No one showed much interest,' the Doctor recalls regretfully.



F is for Femynye

Femynye was the name given to the kingdom of the Amazons whose queen was known as Penthesilea. There were no men in this female nation for any sons born of a union between these female warriors and their neighbouring male countrymen were either killed or returned to their father's country. The Amazons were at least six feet tall and could kill with a bow better than any man!

G is for Gorgon

Medusa was the chief and most horrific of the three gorgons. She had the power to turn any man to stone who looked upon her terrible face, and her hair was made from live serpents!

H is for Hammer

Thor, the Scandinavian god of the household, son of Woden, the god of war, had a magic hammer called 'Mjolnir' which represented thunder and lightning, and this hammer always returned to Thor's hand whenever he threw it at his enemy.

I is for the Ice Age

This is the name given to the Pleistocene geological period when most of the northern hemisphere was filled with ice caps. Palaeolithic man lived during this time, for his remains have been found, together with those of the mammoth and reindeer, in glacial deposits.

J is for Jupiter

As well as being the name of the largest of the planets, Jupiter was also the greatest of all the Roman gods and his statue by Phidias at Olympia was one of the Seven Wonders of the World.

K is for Kali

The city of Calcutta is named after Kali, the goddess of death and destruction. Any effigies of Kali are black in colour and splattered with blood. She has red eyes, four arms, fangs for teeth and she wears a necklace of skulls!

L is for Lamp of Phoebus

The Doctor told his friends that this was the fanciful name given in olden times to the sun.

M is for Mach Number

This is the number, devised by the Austrian scientist whose name it bears, of the ratio of flight speed to the speed of sound. An aircraft travelling at twice the speed of sound is flying at Mach 2.

N is for Noah's Ark

This Noah's Ark is a white band of cloud in the shape of the hull of a ship, spanning the sky like a rainbow. If seen in the north or south, wet weather will follow, but seen in the two other directions, east or west, it will be a dry day.

O is for Orrery

The Doctor recalled seeing the first 'Orrery' made by George Graham at the beginning of the 18th century. It was a complicated device whereby the movements of the planets around the sun were shown by means of clockwork.

P is for Parson and Clerk

Two red sandstone rocks at Dawlish are known by this name because of the strange events which befell a parson and his clerk one stormy night. They were on their way to give comfort to the dying Bishop of Exeter, but instead fell in with drunkards at a wayside tavern. The bishop died before morning and the parson and his clerk found themselves surrounded by demons sent by the devil and they ran to the sea shore . . . to be turned into rocks – so said the Doctor, with a twinkle in his eye!

Q is for Queer Street

. . . where the Doctor and his friends sometimes find themselves, but in fact the expression arises from the query mark that tradesmen put in their books against the names of bad payers who were in financial difficulties!

R is for Ra

Ra was the sun god of ancient Egypt from whom all the Pharaohs were descended. He had the head of a falcon mounted on a solar disc on which sat the asp whose flames consumed all the god's enemies.

S is for Sackerson

The Doctor recalled the funny antics of the famous bear of this name which was once kept in the Paris-Garden, a well-known Tudor bear-baiting garden on London's Bankside, because clever old Sackerson always got the better of his tormentors and put them to flight.

T is for Talus

Talus was a monster made out of brass by Vulcan the smith to guard the island of Crete from invaders like Jason and his argonauts. Talus could make himself as hot as any flame and then he would hug an adversary to death in his arms.

U is for U.F.O.

This, the Doctor somewhat laughingly recalled, was the name given to various unidentified flying objects seen in the sky. They were also sometimes known as 'Flying Saucers', because of their shape!

V is for Venus's Fly-trap

The Venus's Fly-trap plant which grows in the south east of the United States traps insects with its leaves and eats them!

W is for the Wish Hounds

The Wish Hounds are ghostly hounds which haunt Dartmoor on moonless nights, the property of the 'Midnight Hunter of the Moon' who accompanies them on his great horse.

X is for Xiphias

This was the name given long ago to a sword-shaped comet and to the constellation known as Dorado.

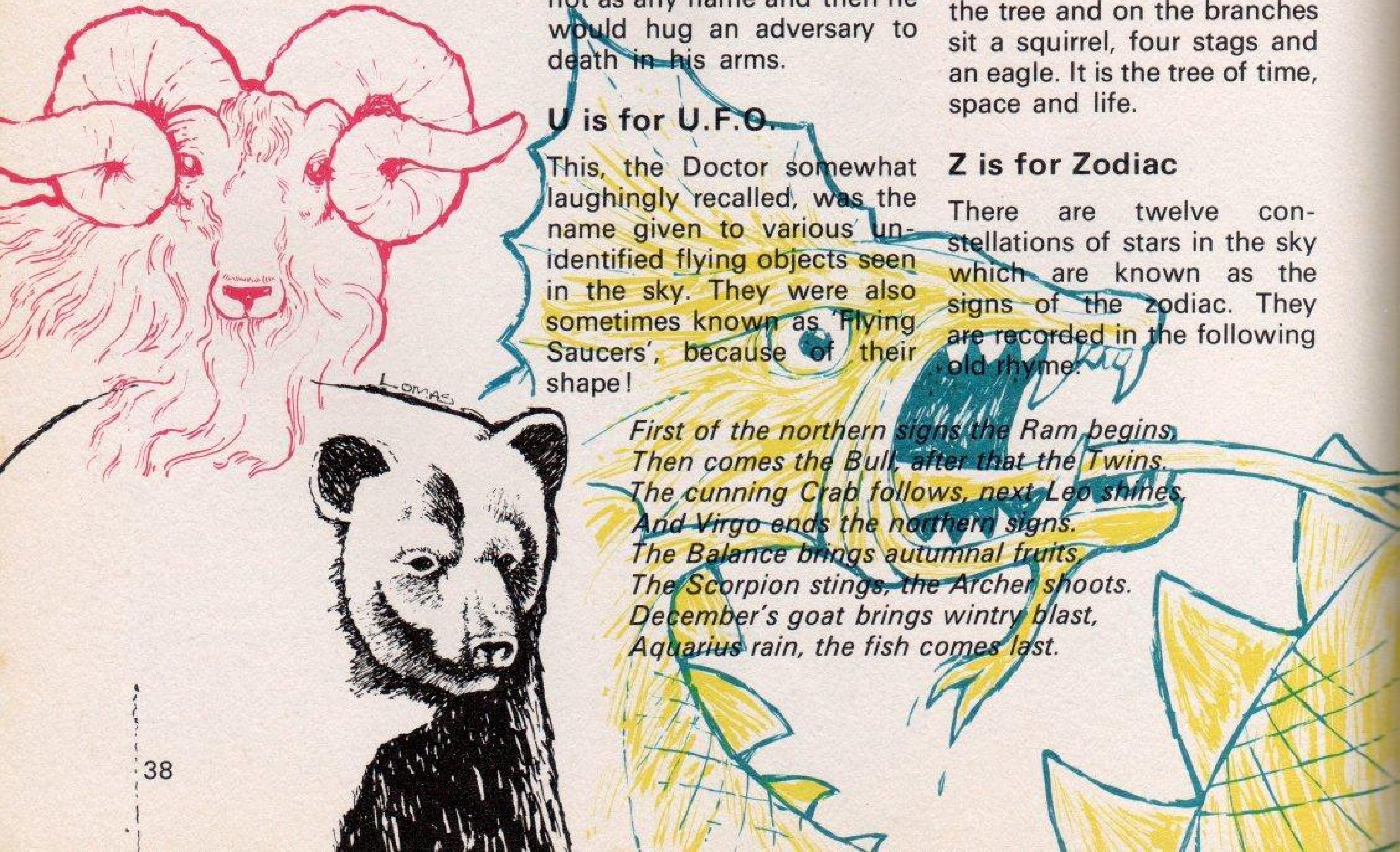
Y is for Yggdrasil

The yggdrasil is an evergreen ash tree which binds together earth, heaven and hell. Honey drops from the branches of the tree and on the branches sit a squirrel, four stags and an eagle. It is the tree of time, space and life.

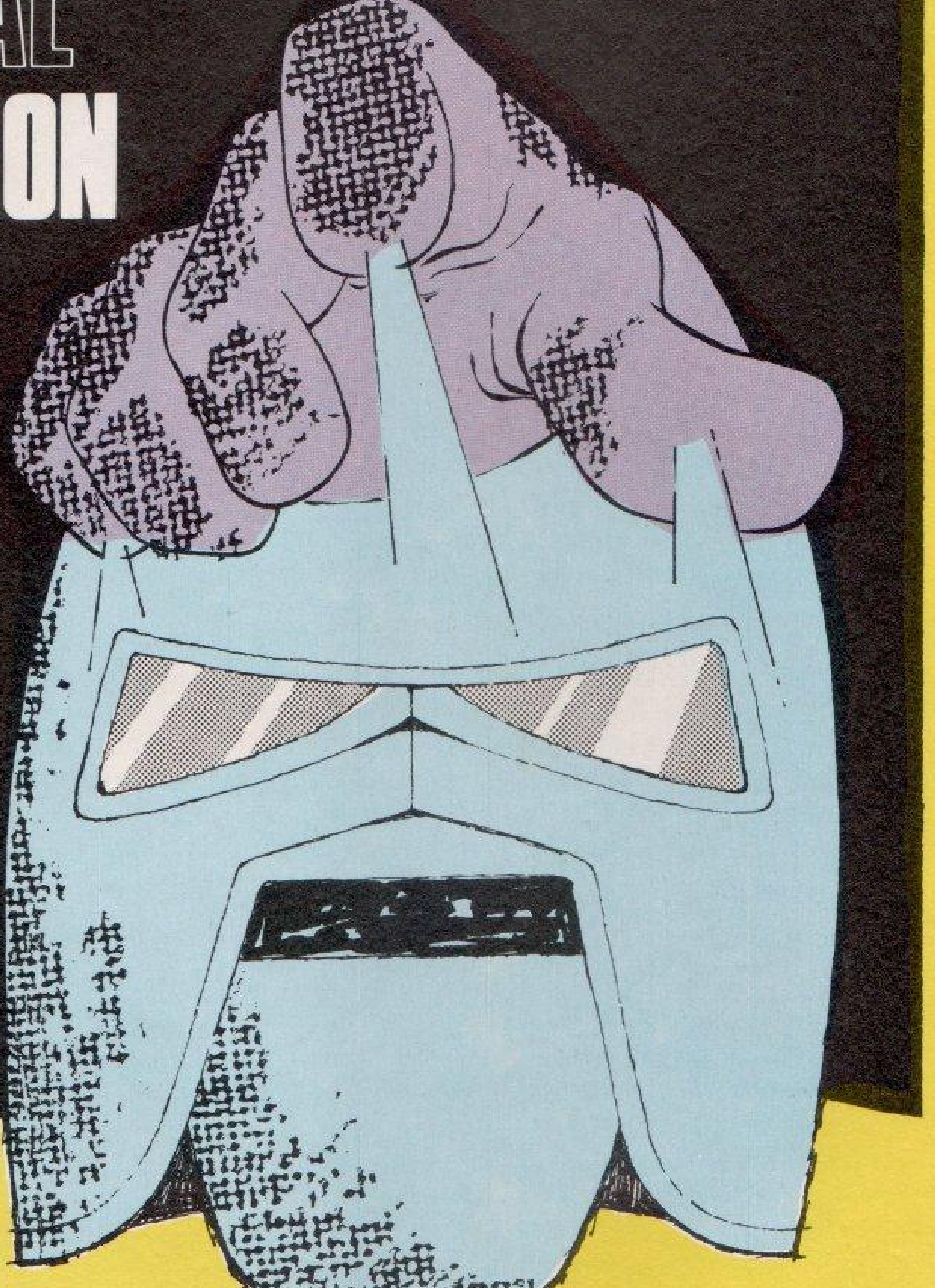
Z is for Zodiac

There are twelve constellations of stars in the sky which are known as the signs of the zodiac. They are recorded in the following old rhyme:

First of the northern signs the Ram begins,
Then comes the Bull, after that the Twins.
The cunning Crab follows, next Leo shines,
And Virgo ends the northern signs.
The Balance brings autumnal fruits,
The Scorpion stings, the Archer shoots.
December's goat brings wintry blast,
Aquarius rain, the fish comes last.



ARITH-MENTAL INTERROGATION



After reports of U.F.O.s over Dartmoor, a lone Zingalon is captured on the moor. The Doctor is asked to help in the interrogation of the alien. The Doctor knows from experience that the usual invasion tactics of the hostile Zingalons is to detonate a delayed action gas bomb that will render the whole of a planet's population unconscious. Unfortunately, the Zingalon will not reveal the whereabouts of the bomb.

Another trait of the Zingalon character the Doctor is aware of is their reluctance to lie. While they will refuse to answer questions under the most horrific tortures, they are a proud race, who consider the telling of untruths shameful. The Doctor knows he will not get a direct answer from the Zingalon as to where the bomb is, but he feels that he can trick the Zingalon into giving the map co-ordinates by arith-mental probing, a form of questioning he learnt on the planet Shill.

The Arith-mental questioning technique requires the Doctor to hypnotise the Zingalon so that he wili answer questions concerning the co-ordinates in his mind, even though he will not directly reveal these numbers.

This is how the Doctor located the bomb and was able to avert the danger. In this case, although he didn't know it, the coordinates were 11 and 90.

The Doctor asked the Zingalon to:

Double the first number: 11	**(22)**
Add 5	**(27)**
Multiply by 100	**(2700)**
Divide by 2	**(1350)**
Deduct the number of days in an earth year: 365	**(985)**
Add the second number: 90	**(1075)**

Once the Doctor had extracted this answer from the Zingalon, all he had to do was add 115 to it and he had the co-ordinates. (1075 + 115 = 1190). The two figures on the left give the first co-ordinate (11) and the two on the right give the second (90).

Why don't you try it on a friend? It works with any numbers between 10 and 100. Don't forget to add 115.

Observing the Stars

Man has made great progress in his discovery of space since he first gazed at the distant stars through a primitive telescope. But for all man's knowledge there is still a vast amount about space that he does *not* know.

Men have orbited the heavens in spaceships, and even walked on the Moon, but there are still huge areas of space about which we know next to nothing.

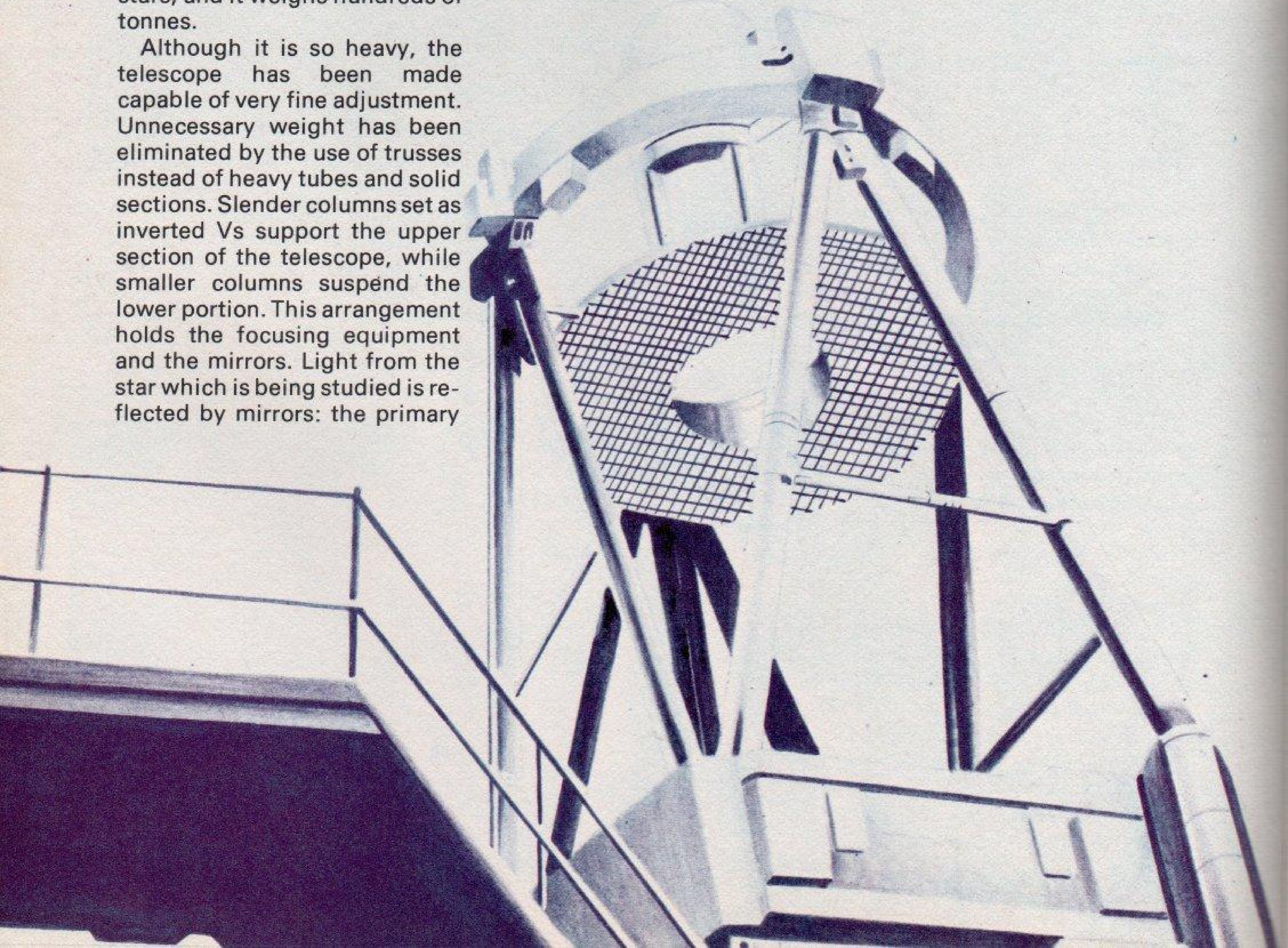
One important new development which it is hoped will expand man's knowledge of outer space is a new telescope at Siding Spring Observatory, Australia. One of the largest telescopes in the southern hemisphere, its giant mirrors peer into the skies through an aperture of 3.9 metres at far distant stars, and it weighs hundreds of tonnes.

Although it is so heavy, the telescope has been made capable of very fine adjustment. Unnecessary weight has been eliminated by the use of trusses instead of heavy tubes and solid sections. Slender columns set as inverted Vs support the upper section of the telescope, while smaller columns suspend the lower portion. This arrangement holds the focusing equipment and the mirrors. Light from the star which is being studied is reflected by mirrors: the primary mirror is concave, and concentrated the light from a distant star to a fine point, then a convex mirror intercepts this and directs it through a hole in the centre of the concave mirror. From here it goes to the point of focus.

The Siding Spring telescope is extremely accurate. The operator in charge types on a keyboard the correct ascension and declination (longitude and latitude) of the star he wishes to observe, and a very highly specialised computer does the rest. With the vast amount of facts and figures stored in its memory bank, the computer locates the star, and locks in on it. And it doesn't stop there: it keeps the chosen star in the centre of its viewing area for as long as it is observed by the operator.

Already the Siding Spring telescope, which was brought into use in 1974, has helped scientists to make important discoveries. It helped locate an unusual galaxy, given the name ISZ63-1, which is thought to be no more than a million years old (very *young* in terms of space) and it is being used to discover new facts about our nearest star (apart from the sun), Alpha Centauri.

What other new facts the telescope will help man to discover we do not know, but man will never give up his quest for knowledge about the fascinating and mysterious vastness that is space.

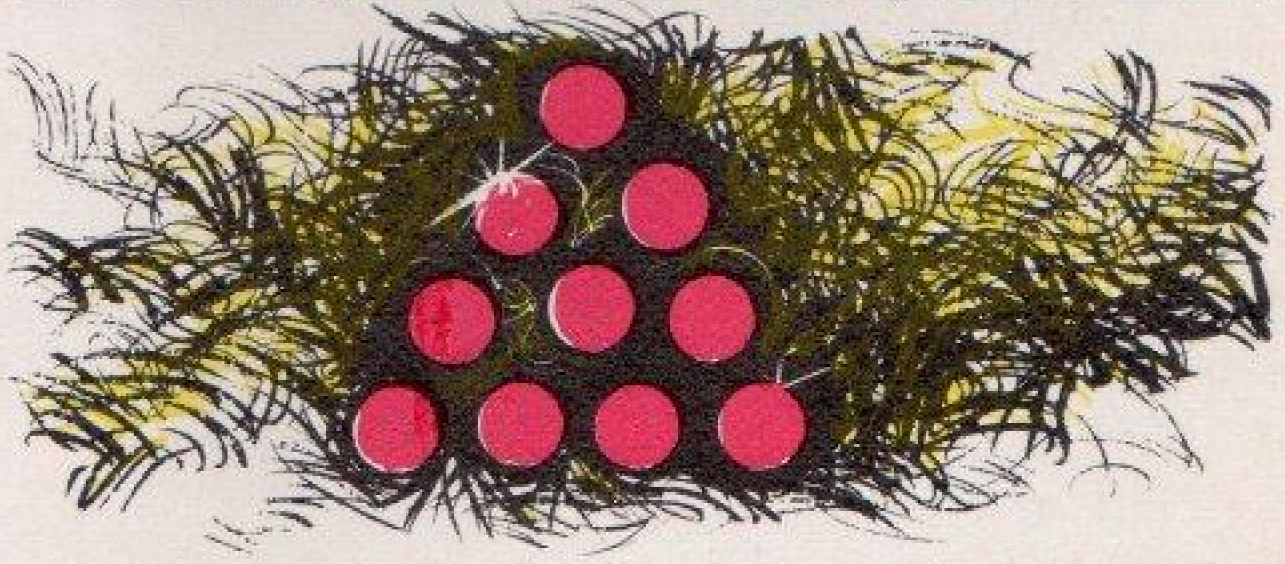


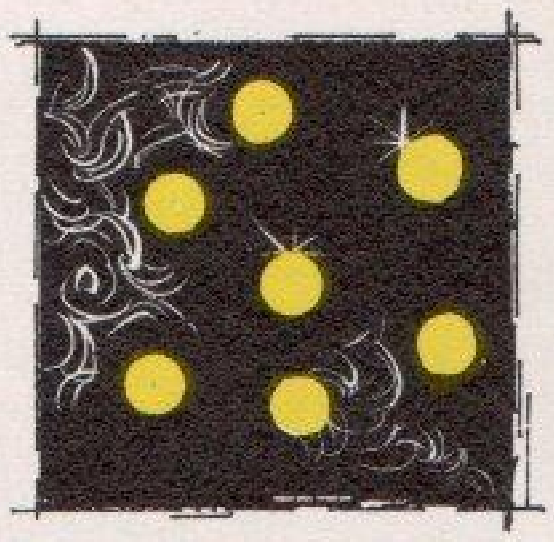
PROBLEMS, PROBLEMS!

The Doctor has had the bad luck to run into the Cosmic Comedian, a man who delights in any form of problem, puzzle or trickery, and he looks like being a permanent guest unless he can beat the trickster at his own game.

Fortunately, the Doctor's mind is too quick for the Cosmic Comedian, and he wins the contest, and his freedom. These are some of the problems he was set. Could you have done them?

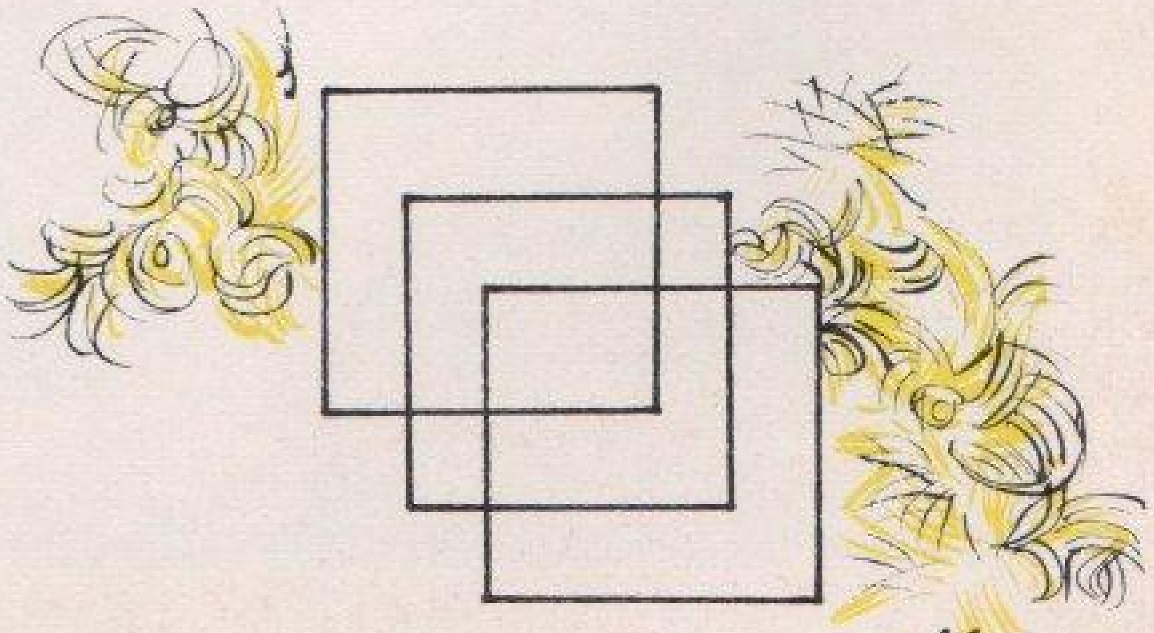
1. At one stage, the Comedian put ten gold discs on the table, as shown, and asked the Doctor to make the triangle point the other way by moving only three discs.





2. Then the Comedian took seven of the discs, and placed them within a square, as shown. 'Now, Doctor,' he said, 'I want you to separate each disc from each other, using three straight lines only.'

3. One of the last problems was this one. The Doctor was shown a drawing of three squares, one on top of the other, and told to copy them. However, there was a catch. He must draw them in one continuous line, without taking his pen from the paper.



Would you have escaped the clutches of the Cosmic Comedian?

The answers are on page 60

PEACEFUL SOLUTION

The Doctor had been asked to attend a meeting of representatives from all the planets in the Harminus galaxy, where a serious disagreement was threatening the finely balanced interplanetary peace treaty. Delegates from the warlike planet Tribb were determined to sabotage the meeting by voting against any peaceful motion, so they could sell their Yamma rays to the highest bidder should hostilities start.

As is usual in Harminian meetings, all delegates communicated through written numbers to overcome the language barrier. The Doctor, aware of the perverse nature of the Tribbs, was determined to thwart their plans for war. He put a motion to the Tribb delegates that needed an answer of 1089 for it to be carried and peace secured.

The motion proposed by the Doctor was written up as 924. Immediately, the war-like delegates of Tribb proposed a diametrically opposed counter proposal of 429. In accordance with Harminian space law the smaller number was subtracted from the larger to illuminate the discussion further. As the Doctor expected, the outcome – 495 – was immediately challenged by a 594 reverse motion from the Tribbs. When such a deadlock is reached the law states that the last two motions be added together so that a compromise solution can be reached.

It was only when they had done this that the hostile Tribb delegates realised they had been tricked into agreeing with the Doctor by coming up with the 1089 answer needed to carry the motion. Peace in the galaxy was guaranteed for fifteen thousand years.

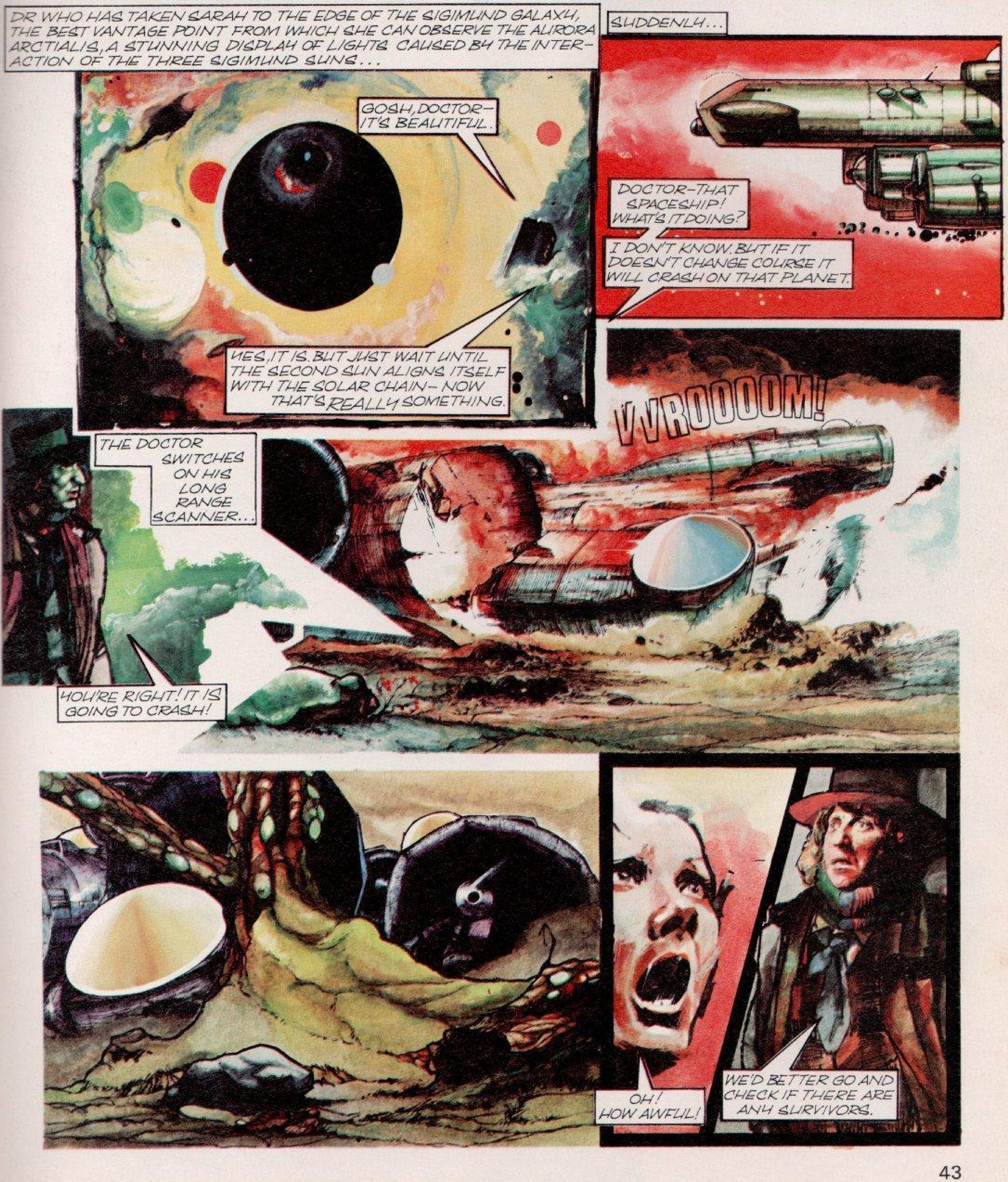
How did the Doctor do it? First of all he knew that the Tribb delegates would do everything in their powers to be difficult. He knew they would reject whatever he came up with and propose exactly the opposite. And so he asked for a code that required an answer of 1089 to be used. From then on it was plain sailing. It didn't matter what he proposed. Why don't you try it yourself?

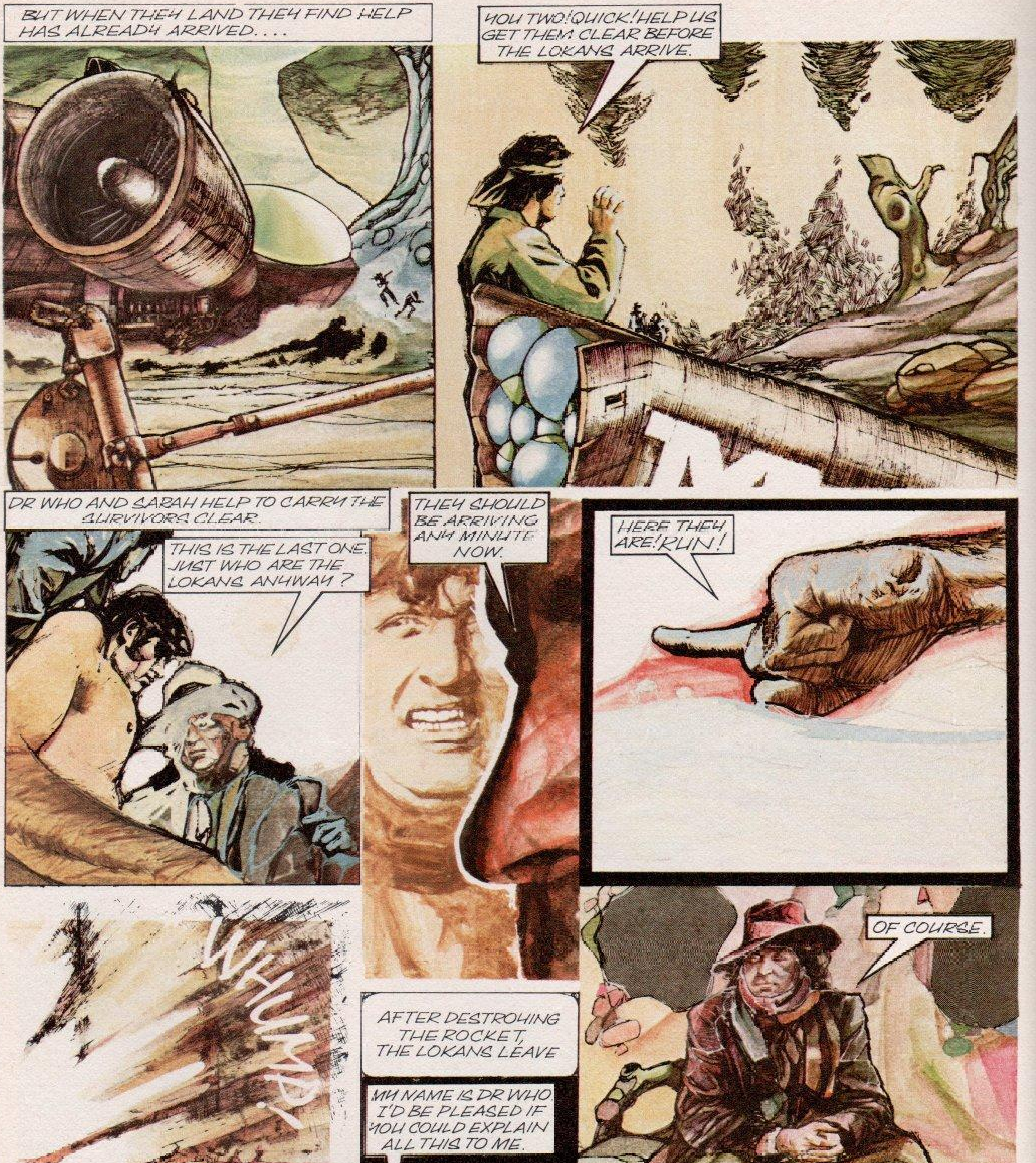
Take any three different numbers, reverse them and subtract the smaller from the larger. Reverse the answer and add it to the answer. Whatever numbers you choose, the answer will always be the same – 1089.

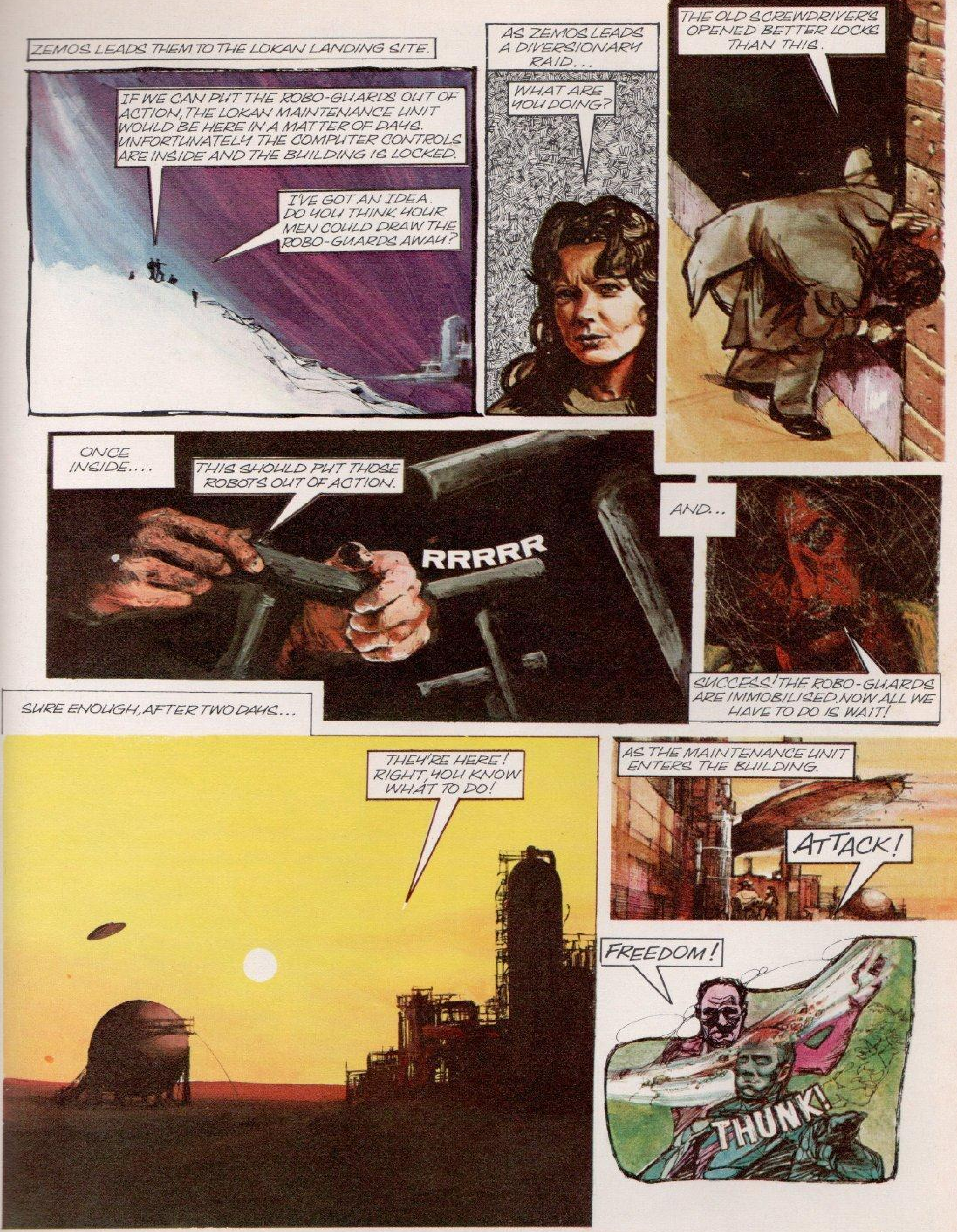
LOOK AT THESE EXAMPLES:

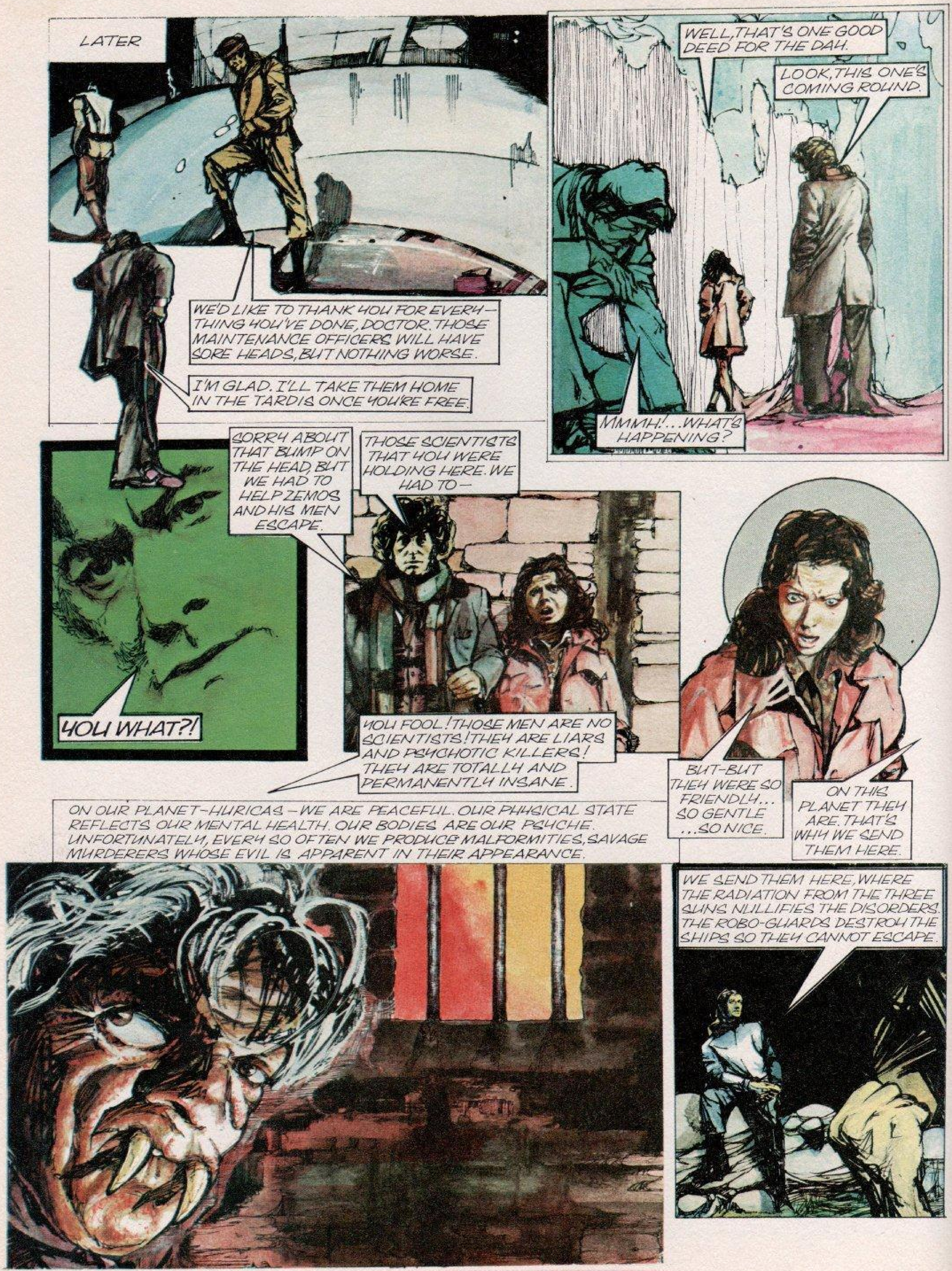
673 – 376 = 297. 297 + 792 = 1089.
521 – 125 = 396. 396 + 693 = 1089.

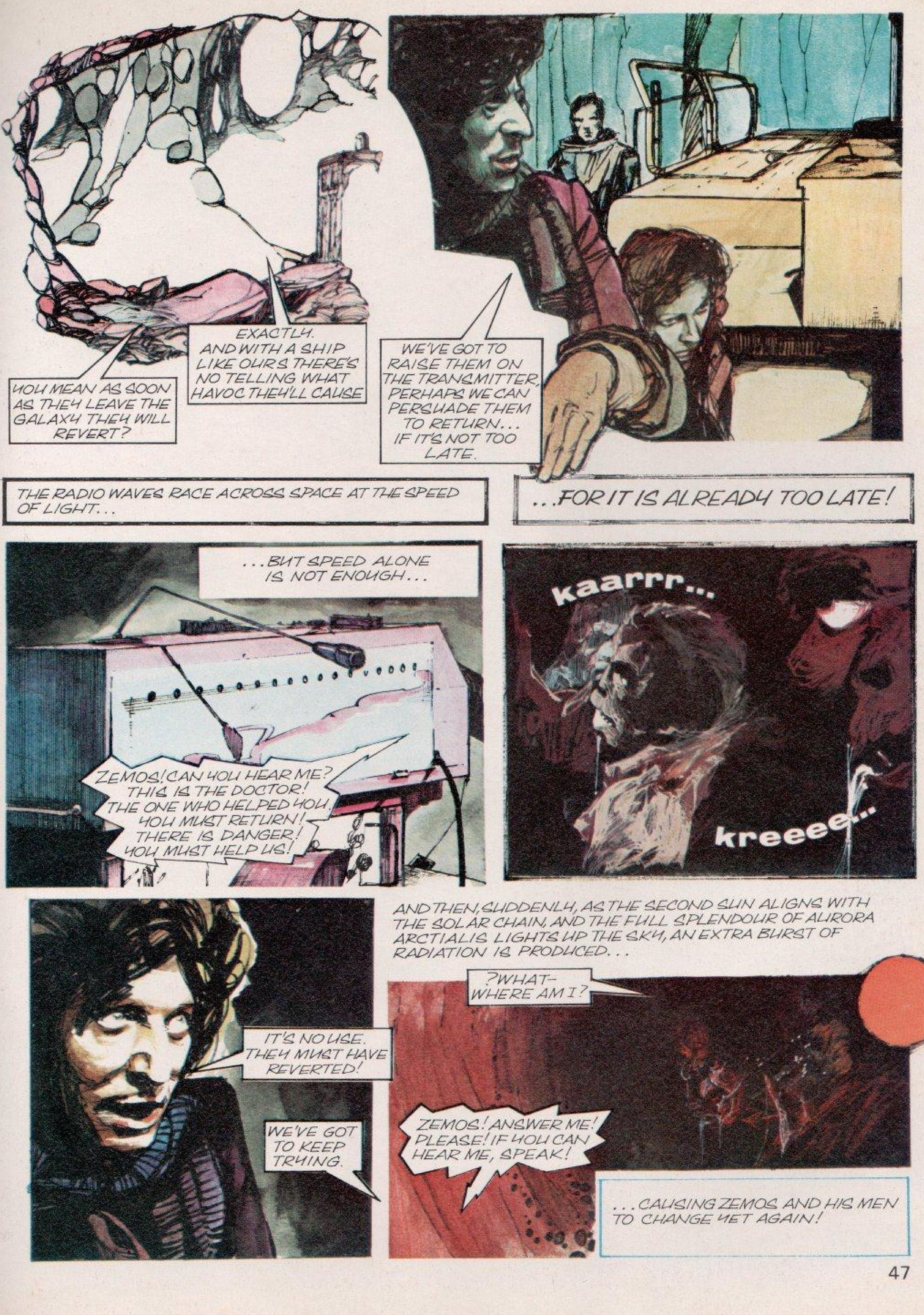
THE TRAITOR

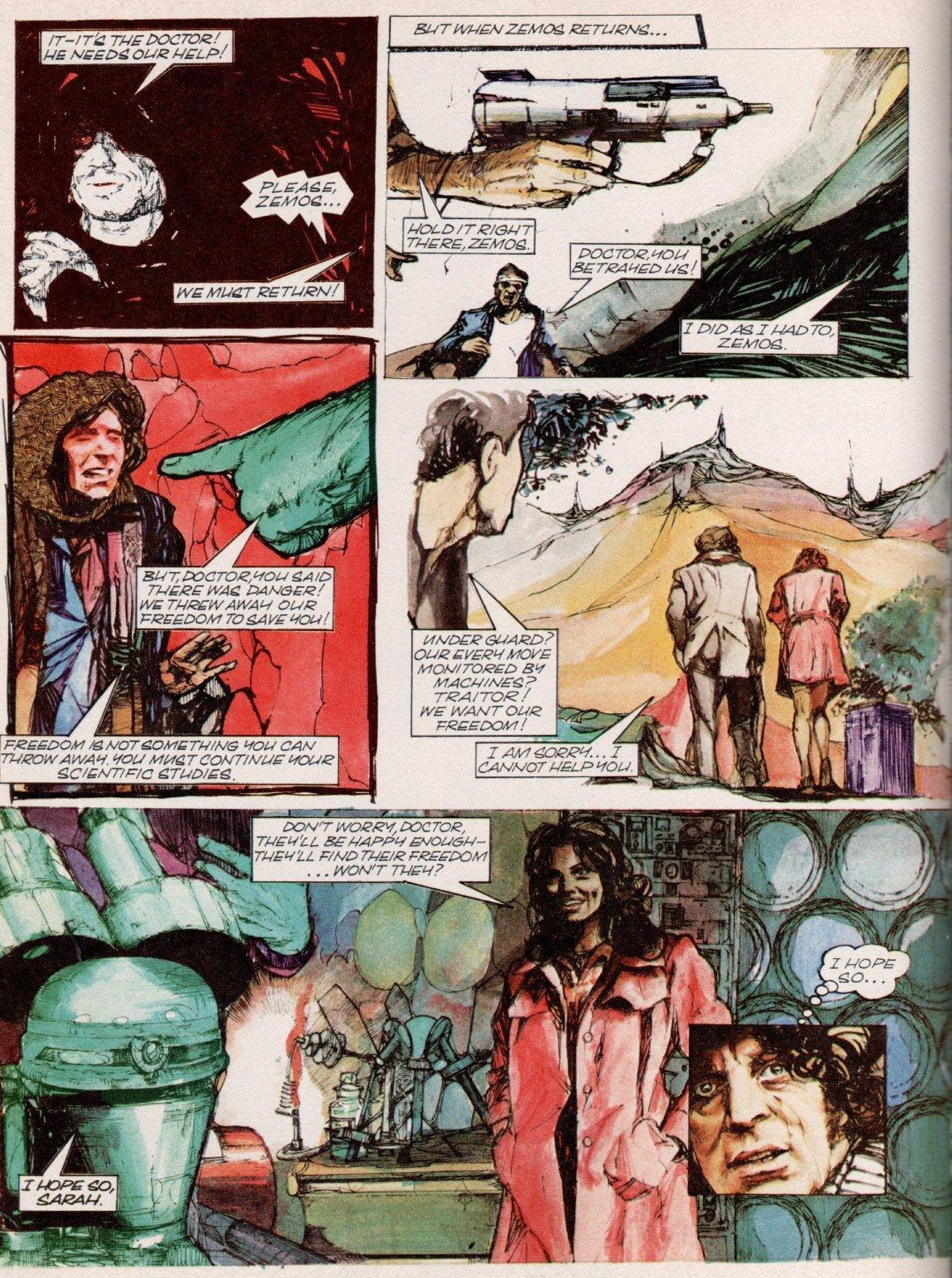

DR WHO HAS TAKEN SARAH TO THE EDGE OF THE SIGIMUND GALAXY, THE BEST VANTAGE POINT FROM WHICH SHE CAN OBSERVE THE AURORA ARCTIALIS, A STUNNING DISPLAY OF LIGHTS CAUSED BY THE INTERACTION OF THE THREE SIGIMUND SUNS...
GOSH, DOCTOR– IT'S BEAUTIFUL.
YES, IT IS. BUT JUST WAIT UNTIL THE SECOND SUN ALIGNS ITSELF WITH THE SOLAR CHAIN– NOW THAT'S REALLY SOMETHING.
SUDDENLY...
DOCTOR–THAT SPACESHIP! WHAT'S IT DOING?
I DON'T KNOW. BUT IF IT DOESN'T CHANGE COURSE IT WILL CRASH ON THAT PLANET.
THE DOCTOR SWITCHES ON HIS LONG RANGE SCANNER...
VVROOOOM!
YOU'RE RIGHT! IT IS GOING TO CRASH!
OH! HOW AWFUL!
WE'D BETTER GO AND CHECK IF THERE ARE ANY SURVIVORS.


BUT WHEN THEY LAND THEY FIND HELP HAS ALREADY ARRIVED....
YOU TWO! QUICK! HELP US GET THEM CLEAR BEFORE THE LOKANS ARRIVE.
DR WHO AND SARAH HELP TO CARRY THE SURVIVORS CLEAR.
THIS IS THE LAST ONE. JUST WHO ARE THE LOKANS ANYWAY?
THEY SHOULD BE ARRIVING ANY MINUTE NOW.
HERE THEY ARE! RUN!
WHUMP!
AFTER DESTROYING THE ROCKET, THE LOKANS LEAVE
MY NAME IS DR WHO. I'D BE PLEASED IF YOU COULD EXPLAIN ALL THIS TO ME.
OF COURSE.
WE ARE ALL SCIENTISTS, MAROONED HERE AFTER BEING ATTACKED BY LOKAN SHIPS. THEY KEEP US PRISONER ON THIS PLANET.... EVERY THREE MOONS A SHIP ARRIVES TO SERVICE THE LOKAN ROBOT GUARDS. IF WE COULD CAPTURE IT WE COULD RETURN TO OUR OWN PLANET. WILL YOU HELP US?


ZEMOS LEADS THEM TO THE LOKAN LANDING SITE.
IF WE CAN PUT THE ROBO-GUARDS OUT OF ACTION, THE LOKAN MAINTENANCE UNIT WOULD BE HERE IN A MATTER OF DAYS. UNFORTUNATELY THE COMPUTER CONTROLS ARE INSIDE AND THE BUILDING IS LOCKED.
I'VE GOT AN IDEA. DO YOU THINK YOUR MEN COULD DRAW THE ROBO-GUARDS AWAY?
AS ZEMOS LEADS A DIVERSIONARY RAID...
WHAT ARE YOU DOING?
THE OLD SCREWDRIVER'S OPENED BETTER LOCKS THAN THIS.
ONCE INSIDE....
THIS SHOULD PUT THOSE ROBOTS OUT OF ACTION.
RRRRR
AND...
SUCCESS! THE ROBO-GUARDS ARE IMMOBILISED. NOW ALL WE HAVE TO DO IS WAIT!
SURE ENOUGH, AFTER TWO DAYS...
THEY'RE HERE! RIGHT, YOU KNOW WHAT TO DO!
AS THE MAINTENANCE UNIT ENTERS THE BUILDING.
ATTACK!
FREEDOM!
THUNK!


LATER
WE'D LIKE TO THANK YOU FOR EVERYTHING YOU'VE DONE, DOCTOR. THOSE MAINTENANCE OFFICERS WILL HAVE SORE HEADS, BUT NOTHING WORSE.
I'M GLAD. I'LL TAKE THEM HOME IN THE TARDIS ONCE YOU'RE FREE.
WELL, THAT'S ONE GOOD DEED FOR THE DAY.
LOOK, THIS ONE'S COMING ROUND.
MMMH!... WHAT'S HAPPENING?
YOU WHAT?!
SORRY ABOUT THAT BUMP ON THE HEAD, BUT WE HAD TO HELP ZEMOS AND HIS MEN ESCAPE.
THOSE SCIENTISTS THAT YOU WERE HOLDING HERE. WE HAD TO—
YOU FOOL! THOSE MEN ARE NO SCIENTISTS! THEY ARE LIARS AND PSYCHOTIC KILLERS! THEY ARE TOTALLY AND PERMANENTLY INSANE.
BUT-BUT THEY WERE SO FRIENDLY... SO GENTLE ...SO NICE.
ON THIS PLANET THEY ARE. THAT'S WHY WE SEND THEM HERE.
ON OUR PLANET—HURICAS—WE ARE PEACEFUL. OUR PHYSICAL STATE REFLECTS OUR MENTAL HEALTH. OUR BODIES ARE OUR PSYCHE. UNFORTUNATELY, EVERY SO OFTEN WE PRODUCE MALFORMITIES, SAVAGE MURDERERS WHOSE EVIL IS APPARENT IN THEIR APPEARANCE.
WE SEND THEM HERE, WHERE THE RADIATION FROM THE THREE SUNS NULLIFIES THE DISORDERS. THE ROBO-GUARDS DESTROY THE SHIPS SO THEY CANNOT ESCAPE.


YOU MEAN AS SOON AS THEY LEAVE THE GALAXY THEY WILL REVERT?
EXACTLY. AND WITH A SHIP LIKE OURS THERE'S NO TELLING WHAT HAVOC THEY'LL CAUSE
WE'VE GOT TO RAISE THEM ON THE TRANSMITTER, PERHAPS WE CAN PERSUADE THEM TO RETURN... IF IT'S NOT TOO LATE.
THE RADIO WAVES RACE ACROSS SPACE AT THE SPEED OF LIGHT...
...FOR IT IS ALREADY TOO LATE!
...BUT SPEED ALONE IS NOT ENOUGH...
ZEMOS! CAN YOU HEAR ME? THIS IS THE DOCTOR! THE ONE WHO HELPED YOU. YOU MUST RETURN! THERE IS DANGER! YOU MUST HELP US!
kaarrr...
kreeeee...
AND THEN, SUDDENLY, AS THE SECOND SUN ALIGNS WITH THE SOLAR CHAIN, AND THE FULL SPLENDOUR OF AURORA ARCTIALIS LIGHTS UP THE SKY, AN EXTRA BURST OF RADIATION IS PRODUCED...
IT'S NO USE. THEY MUST HAVE REVERTED!
WE'VE GOT TO KEEP TRYING.
?WHAT- WHERE AM I?
ZEMOS! ANSWER ME! PLEASE! IF YOU CAN HEAR ME, SPEAK!
...CAUSING ZEMOS AND HIS MEN TO CHANGE YET AGAIN!


IT–IT'S THE DOCTOR! HE NEEDS OUR HELP!
PLEASE, ZEMOS...
WE MUST RETURN!
BUT WHEN ZEMOS RETURNS...
HOLD IT RIGHT THERE, ZEMOS.
DOCTOR, YOU BETRAYED US!
I DID AS I HAD TO, ZEMOS.
BUT, DOCTOR, YOU SAID THERE WAS DANGER! WE THREW AWAY OUR FREEDOM TO SAVE YOU!
FREEDOM IS NOT SOMETHING YOU CAN THROW AWAY. YOU MUST CONTINUE YOUR SCIENTIFIC STUDIES.
UNDER GUARD? OUR EVERY MOVE MONITORED BY MACHINES? TRAITOR! WE WANT OUR FREEDOM!
I AM SORRY... I CANNOT HELP YOU.
DON'T WORRY, DOCTOR, THEY'LL BE HAPPY ENOUGH– THEY'LL FIND THEIR FREEDOM ...WON'T THEY?
I HOPE SO...
I HOPE SO, SARAH.

SPACEWORD!

JOHN FAIRNIGHT

1				2		■	3	4		5
	■	■	■		■	6	■		■	
7		8			■		■		■	
	■		■	9						■
10					■		■		■	■
	■		■	■	■	■	■		■	11
12				13	■	14				
	■		■		■		■		■	
15					■		■	■	■	
	■	■	■	■	■		■	16	■	
17				■	18					

Clues Across

1. The ringed planet. (6)
3. Home of the little green men? (4)
7. & 12. How we measure distance in space. (5,5)
9. See 2. Down.
10. It used to be called a wireless. (5)
14. The first dog in space. (5)
15. The daily movements of the sea. (5)
17. Earth's companion. (4)
18. A planet with five of 17. Across. (6)

Clues Down

1. A collection of planets, including Earth. (5,6)
2. & 9 Across. Slows a spacecraft down. (5,6)
4. Tiny planetary body. (8)
5. Blue or grey, it's always there. (3)
6. When two rockets join together they do this. (4)
8. American pioneer in space travel. (7)
11. Dr. Who's time machine. (6)
13. Distress signal. (3)
14. Anything to do with 17. Across. (5)
16. United Nations. (2)

Answers on page 60

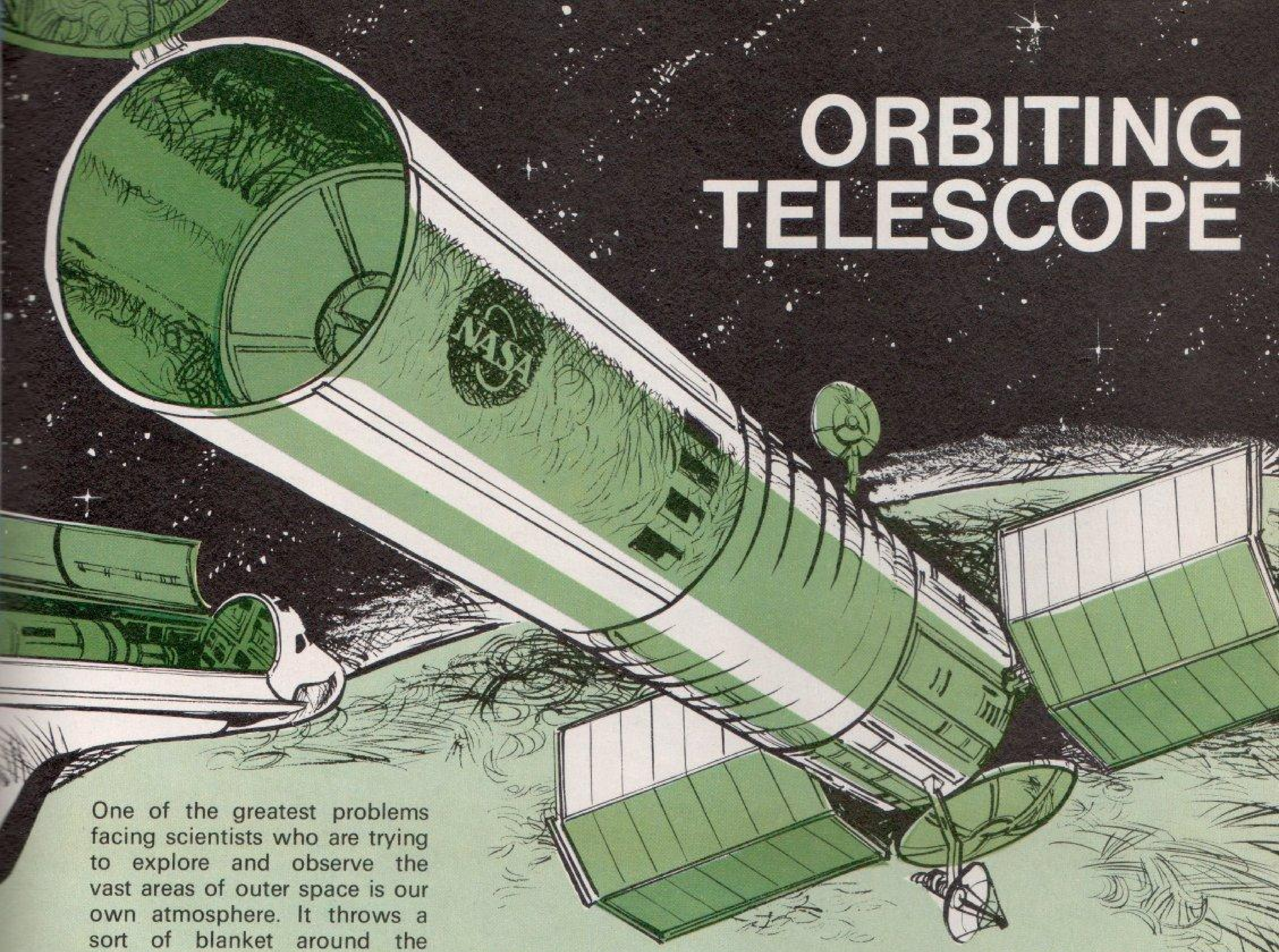
true or false?

1. Uranus is the largest planet in our solar system. True or false?
2. 'Zip fuel' is a special high-energy jet engine fuel. True or false?
3. Sound can travel through space. True or false?
4. Buzz Aldrin was the first man on the moon. True or false?
5. The first man to walk in space was a Russian. True or false?
6. There is water on the moon. True or false?
7. Pluto is the coldest planet in our solar system. True or false?
8. Both Russia and the U.S.A. have sent a woman into space. True or false?
9. The Van Allen Radiation Belt is worn by astronauts when they leave their spacecraft. True or false?

Turn to page 60 to check your answers

JOHN FRENACHT

ORBITING TELESCOPE



One of the greatest problems facing scientists who are trying to explore and observe the vast areas of outer space is our own atmosphere. It throws a sort of blanket around the Earth, and even with very powerful and specialised telescopes observations are made through a dim, distorting mistiness.

Scientists in America think that they have come up with something that will solve this problem. If you can't make detailed observations *through* the atmosphere, why not make them from *above* it?

With this idea in mind, plans have been made to place a powerful telescope in orbit above the Earth's atmosphere, so that clear and accurate information about the far reaches of space may be gathered.

The orbiting telescope will be carried above the atmosphere by a spaceship, then it will set to work, beaming back clear pictures to earth of what the skies are *really* like, and gathering more information than a telescope on Earth could ever hope to do.

The telescope will carry a remarkably accurate guidance system, so accurate that it will be capable of locking onto something the thickness of a single strand of hair at a distance of 3 kilometres!

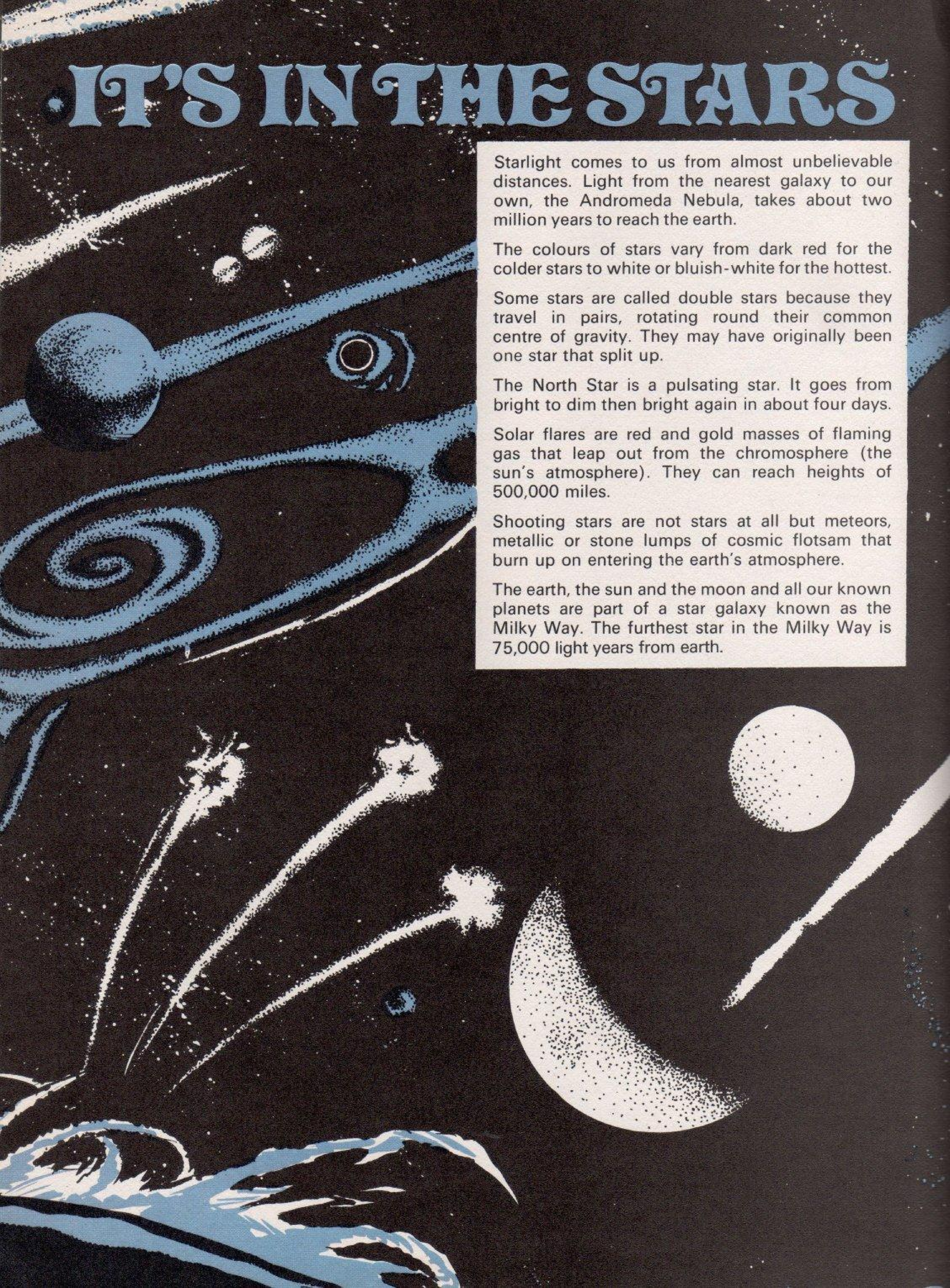
It will also carry a vast array of scientific instruments to measure and observe. It will be, in fact, a self-contained satellite, with its own solar panels to provide electricity to power the instruments and the radio. The radio will be one of the most important pieces of equipment, for it will beam back to scientists on Earth all the data collected by the instruments.

What is it hoped that the orbiting telescope will tell us? One of its most important missions will be to observe space oddities like quasars, which we know little about. Quasars are quite small, appear bright and in some cases give off a strong radio signal. Other mysterious bodies, like pulsars, which were only discovered in 1967 and are thought to be made perhaps of the ashes of a star which has exploded, are also to be investigated and observed.

The telescope will also make a study of energy processes in space, in the hope that man may one day be able to utilise them in the way that electricity is used now, and will try to throw new light on the actual early formation of planets and stars.

It is hoped that the telescope will be in orbit in the late 1980s, so we may soon know what it is able to discover about the mysterious reaches that are outer space.

IT'S IN THE STARS



Starlight comes to us from almost unbelievable distances. Light from the nearest galaxy to our own, the Andromeda Nebula, takes about two million years to reach the earth.

The colours of stars vary from dark red for the colder stars to white or bluish-white for the hottest.

Some stars are called double stars because they travel in pairs, rotating round their common centre of gravity. They may have originally been one star that split up.

The North Star is a pulsating star. It goes from bright to dim then bright again in about four days.

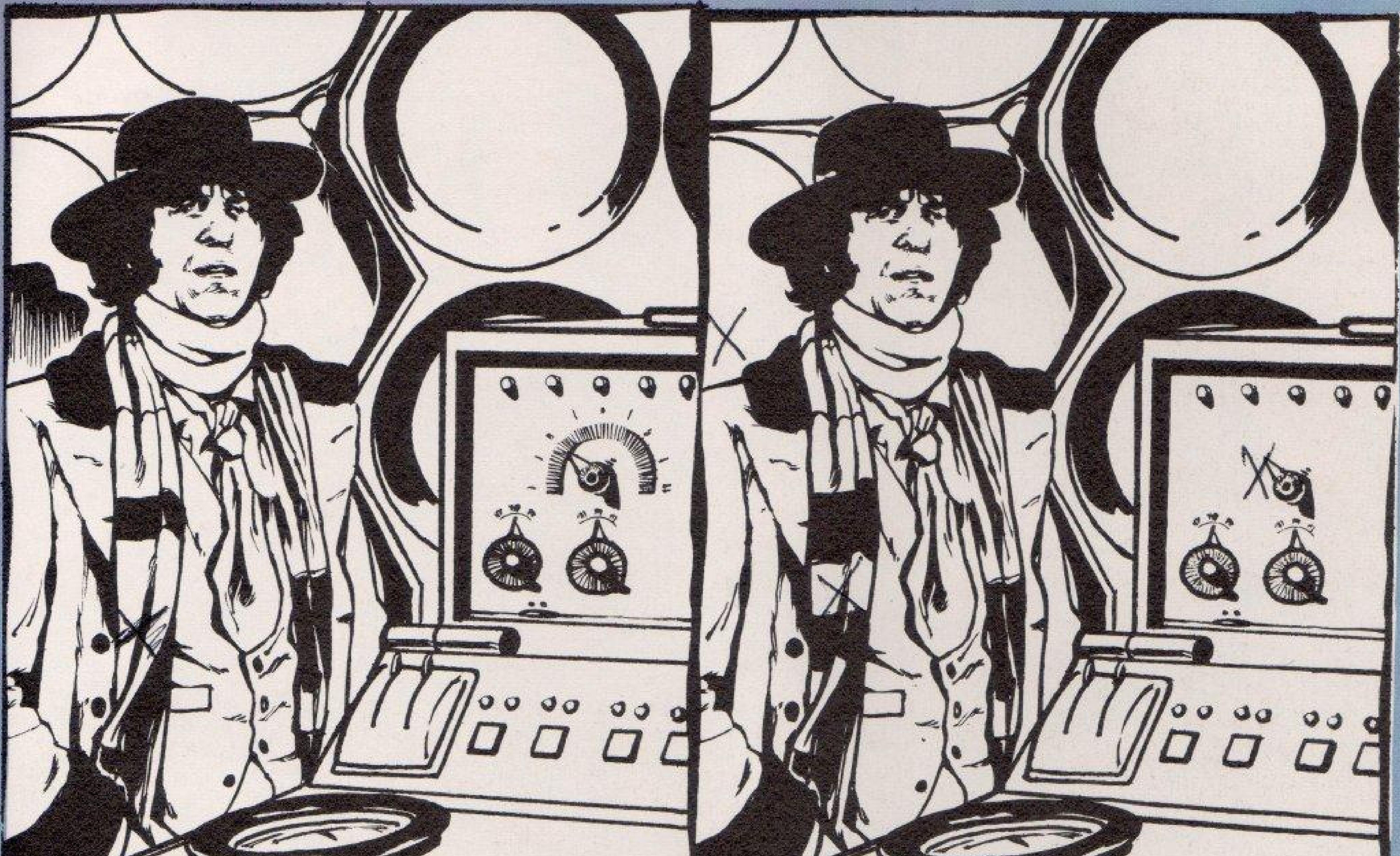
Solar flares are red and gold masses of flaming gas that leap out from the chromosphere (the sun's atmosphere). They can reach heights of 500,000 miles.

Shooting stars are not stars at all but meteors, metallic or stone lumps of cosmic flotsam that burn up on entering the earth's atmosphere.

The earth, the sun and the moon and all our known planets are part of a star galaxy known as the Milky Way. The furthest star in the Milky Way is 75,000 light years from earth.

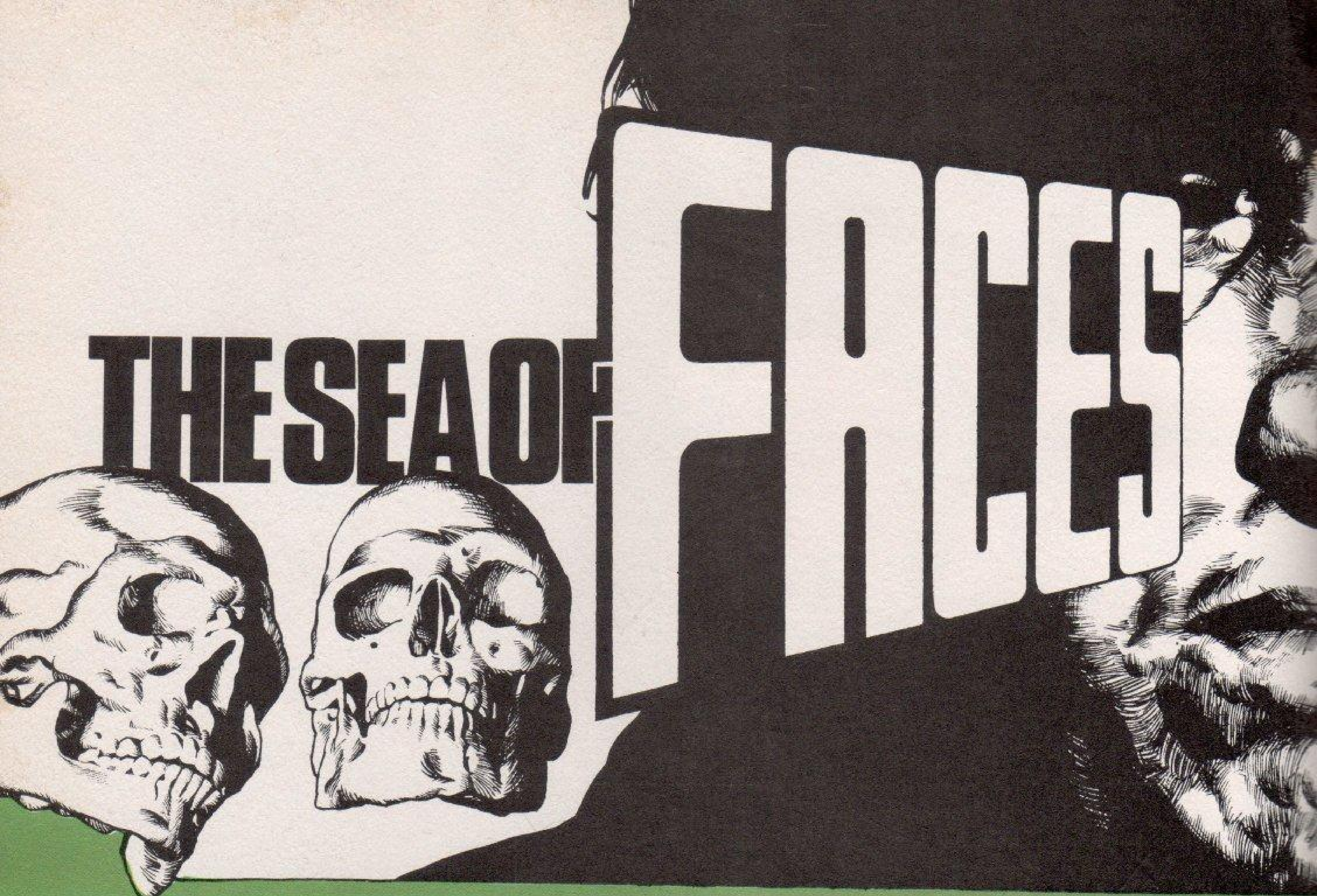
SPOT THE DIFFERENCE!

Here are two pictures of the Doctor in the Tardis. They both look the same don't they? Or do they? If you look closely, you will see that the second picture is slightly different from the first. How many changes can you find?



Check your answers on page 60.

THE SEA OF FACES



'What on earth are they doing?' asked Sarah apprehensively.

The Doctor put his arm round her shoulder as he joined her in front of the scanner. 'They don't appear to be doing anything at all,' he answered.

'But why?'

The Doctor looked at the sea of faces stretching in front of him. There were thousands and thousands of them, stretching as far as he could see. The Doctor turned a dial and the scanner moved slowly round. It was the same everywhere: faces, pale and drawn, their eyes lying deep in their sockets, their mouths hanging open, swaying in a slow jerky rhythm from side to side.

'I don't know,' said the Doctor with a sigh, 'but if you're game we can go and find out.' He looked at Sarah and saw the uncertainty on her face. He gave her a quick hug before releasing his arm and opening the doors of the Tardis. Sarah stepped back. The doorway was filled with the creatures, standing there swaying, arms by their sides, as if waiting for something; their bleak expressionless eyes seeming to demand something of the Doctor and Sarah, like autograph hunters in a nightmare.

But this was no nightmare; this was no fantasy. The Doctor stepped out from the Tardis and, holding Sarah's hand tightly, brushed past the first row of them.

They were humanoid creatures, standing between five and six feet. They were hairless and had no ears, with wide bodies and short, strong, stocky legs. Every now and then the Doctor would see what he thought was a sudden movement, but when he looked again there was nothing.

He and Sarah passed on through the humid forest of living bodies.

Exactly what he hoped to find, Sarah did not know. She simply clung onto his hand and followed until he stopped.

'Can you hear anything?' he asked.

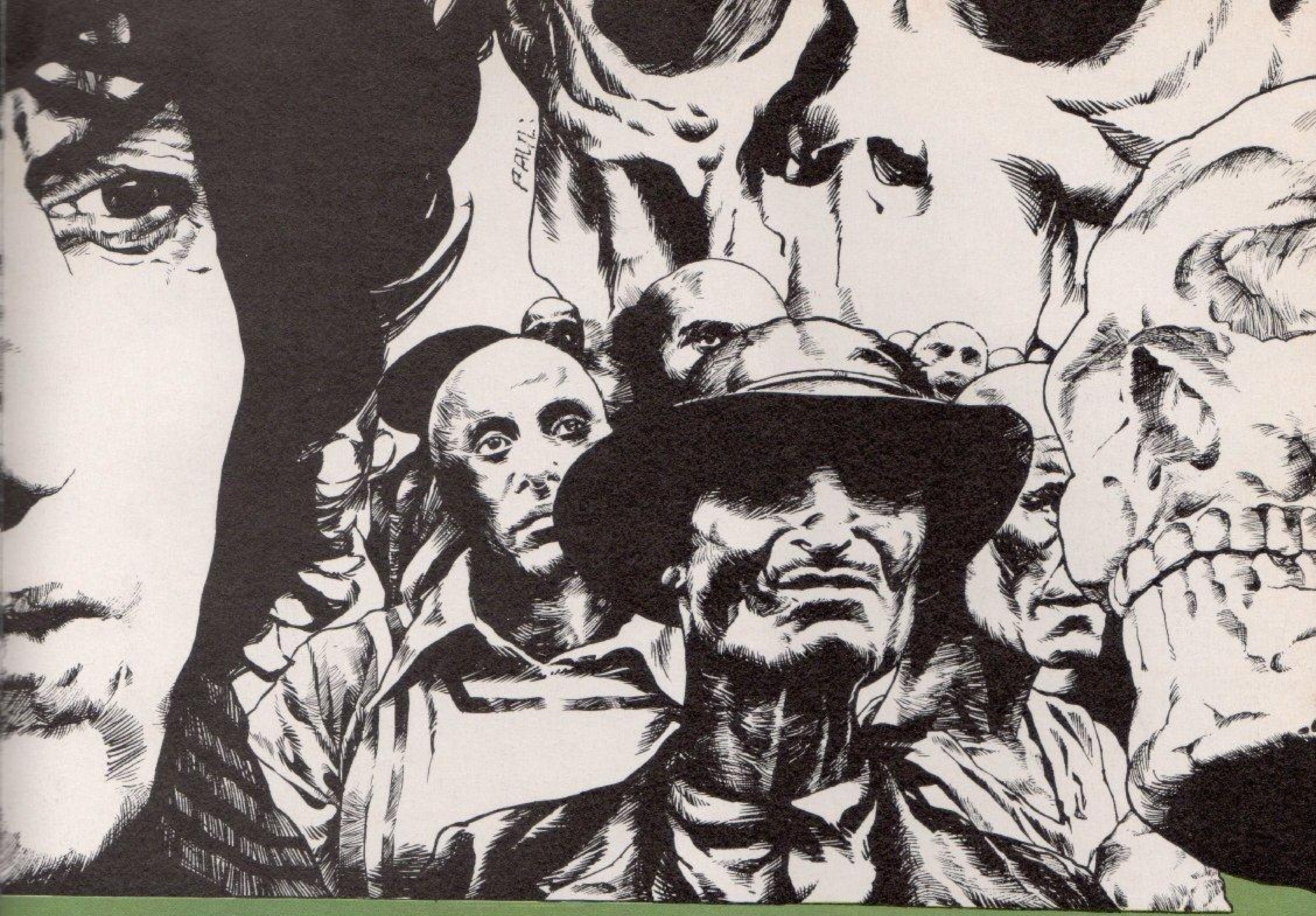
Sarah listened hard. She could see the pale bodies, she could smell the confusingly sweet-sour odour that came from them, she could touch their clammy skin, but the only thing she heard was the sound of a million bodies breathing.

'Weird, isn't it?' she said. 'It's like the sound of the sea or . . . or . . .'

The Doctor looked at her patiently. 'Then you don't hear it?' he asked. 'You can hear only their breathing?'

'Yes.' Sarah felt disappointed, and it was only the expression of concentration on the Doctor's face that stopped her from feeling jealous. Why did she never hear these things?

'It's like listening in at a party on earth,' said the Doctor.



'What do you know about parties?' asked Sarah peevishly. 'I bet you've never been to one in your life.'

'I haven't – but I've listened to several. The ebb and flow of words and feelings fascinate me. That seemingly bland hubbub is an intricately woven fabric, where threads are picked up and lost, where little pockets of ugliness and splendour make up a variable texture of considerable interest.'

Sarah looked at him blankly. Sometimes she thought that the Doctor, for all his wisdom, was incapable of understanding the average person on earth. Then she sighed, for why should he? If he was different she wouldn't be here and, however unnerving it might be, it was an opportunity afforded very few people from earth.

'What can you hear?' she asked.

'That same kind of hubbub at first,' said the Doctor, quite excitedly. 'But when I tune in on one individual source, the result is quite different. These people are very much alive, Sarah, if only in their own minds. Each one of them is experiencing something far stronger than any human dream, and each one of them is experiencing it separately from the others.' The Doctor laid his hand on the shoulder of the creature nearest to him. 'This one here is climbing a mountain, with a child on his back and a woman by his side. He keeps climbing higher and higher, up into the cool mountain air. He jumps clear of fast-moving streams and lifts his family over huge boulders, but he never seems to get higher. It's as if he doesn't want to reach the top. It's as if he's afraid that by doing so he would be cast back down here again.'

'How do you know?'

'I can hear it in his mind.' The Doctor moved his hand to the shoulder of another creature. 'This one is swimming. The sun shines through the water and lights up a blue expanse in front of him. He swims into it, ever forward, feeling the cool water rushing past his body, feeling the strength of his arms as they propel him, feeling joy in the knowledge that he does not need to surface for air.' The Doctor paused a moment, his head leaning slightly to one side. 'And yet he too is going nowhere. He will not swim down into the depths for fear he might reach the bottom. He will not surface in case the spell is broken, the freedom lost. It's as if –'

'Doctor!'

The Doctor turned swiftly, but he was not quick enough. Whatever it was, he missed seeing it, but the images he had been receiving had been suddenly interrupted by other telepathic messages, stronger, more urgent and, for the brief moment they entered the Doctor's head, more confused. The impression he got was one of hunger, disillusionment, frustration and fear. Then it was gone.

'What was it?'

'It looked . . . it looked like a little boy!'

'A what?'

'It looked like the others, but it was smaller. It moved very quickly. And Doctor, its eyes . . .'

'Yes?'

'Its eyes . . . they looked straight into mine . . . Oh Doctor, I've never seen eyes like it. He was so frightened . . . and yet so brave . . . and so, so hungry!'

The Doctor crouched down and looked in the direction the child had gone. The crowds of creatures were so tightly packed he could not see more than ten metres. He stood up.

'Well, I suppose if we're going to learn more about this planet, we've got to try and communicate with whatever it was.'

'What about these ones?' asked Sarah, gesturing to the creatures huddling round them.

The Doctor shook his head. 'Their minds are impenetrable. They have locked out all communication and interference. They exist only in their fantasies. We've got to find ourselves one of those children.'

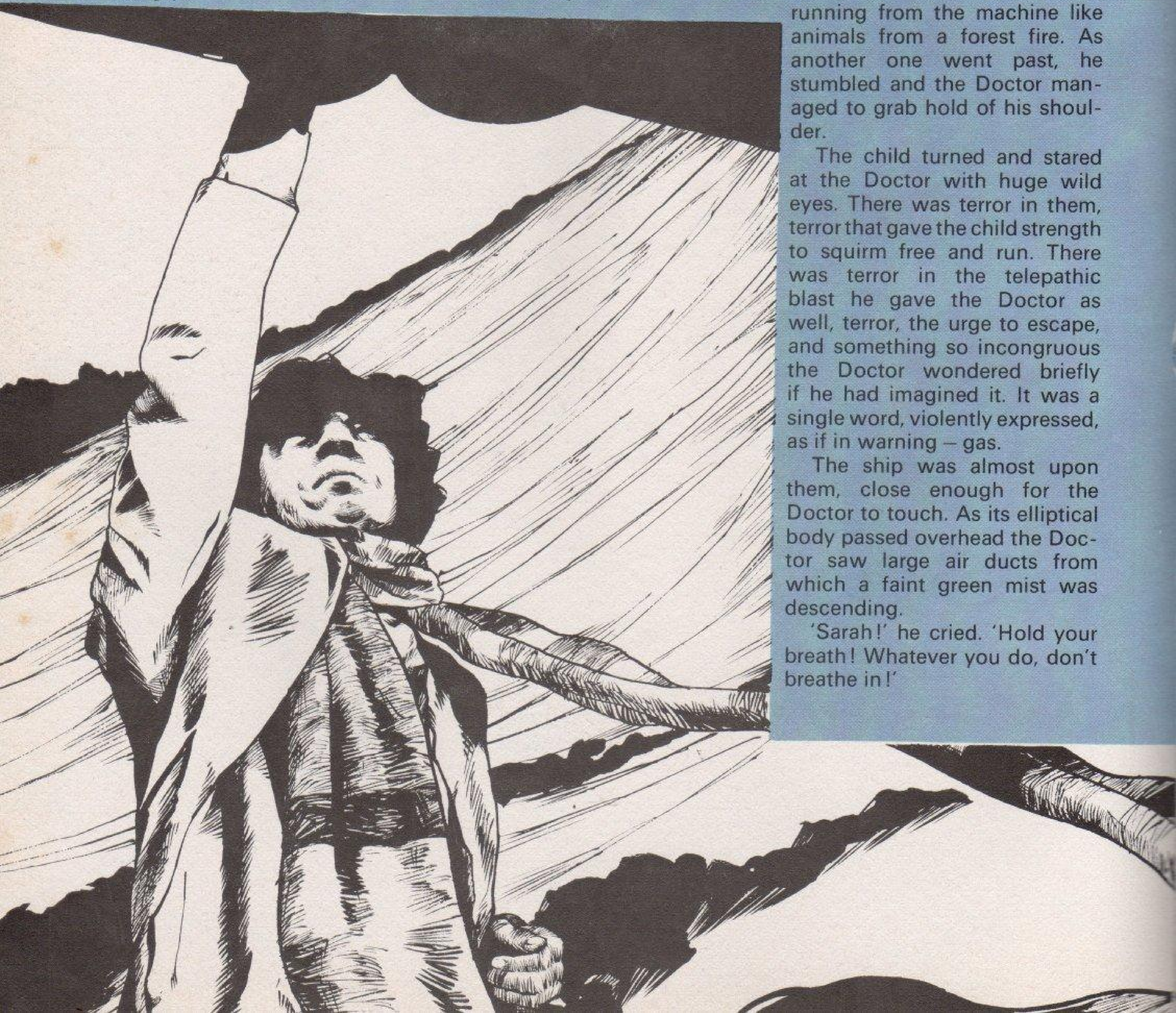
'We may not have time, Doctor,' said Sarah calmly, 'I think somebody's just found us.'

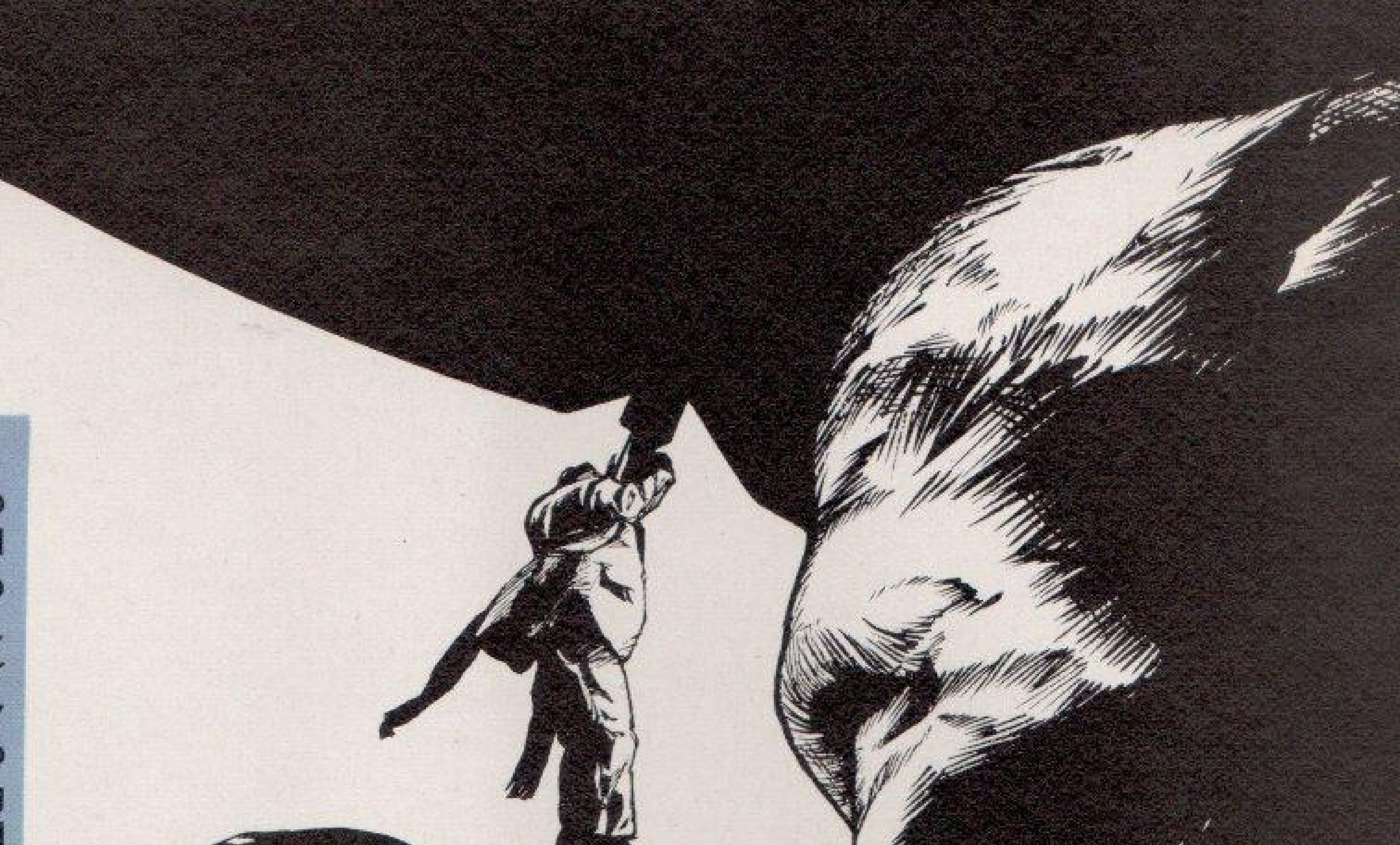
The Doctor looked up and saw a huge, cigar-shaped spaceship moving slowly towards them over the heads of the human ocean. Although the craft measured more than a hundred metres across, it passed within inches of the heads of the taller creatures. It made no sound as it moved slowly along, and it held its course without wavering. When it was within a hundred yards of them, the Doctor and Sarah heard another noise, a pitter-pattering that grew louder and louder as the ship drew closer. Suddenly a small shape shot past them. Then another, and another, and another. It was the children, running from the machine like animals from a forest fire. As another one went past, he stumbled and the Doctor managed to grab hold of his shoulder.

The child turned and stared at the Doctor with huge wild eyes. There was terror in them, terror that gave the child strength to squirm free and run. There was terror in the telepathic blast he gave the Doctor as well, terror, the urge to escape, and something so incongruous the Doctor wondered briefly if he had imagined it. It was a single word, violently expressed, as if in warning – gas.

The ship was almost upon them, close enough for the Doctor to touch. As its elliptical body passed overhead the Doctor saw large air ducts from which a faint green mist was descending.

'Sarah!' he cried. 'Hold your breath! Whatever you do, don't breathe in!'





The Doctor pushed Sarah to the ground hoping she would escape the gas, but it was too late. She felt her eyes watering, felt a stinging sensation in her throat . . . and then suddenly she was free, riding up into space on a silver chariot, flying through the air in a star-spangled costume, pulled along by a huge white horse.

The Doctor looked down at her body. The images from her mind filled his head. Around her, some of the other creatures were falling to the ground. The spaceship was still passing above them. He bent down and pulled Sarah to her feet. Her eyes were glazed as she stood there. The spaceship had almost passed. Still holding his breath, the Doctor reached up, grabbed a huge bolt that stuck out from the back, and lifted himself upward.

As he scrambled onto the back of the craft he looked back at Sarah, trying to make note of a landmark that would help him find her if he returned alive. There was none, except the Tardis, and even that was soon lost as the spaceship passed on over the thousands and millions of faces that stretched away on all sides right to the horizon.

As he set about finding a way into the craft, the Doctor was struck by a nagging fear. What if this was *his* dream? What if the gas had affected *him* after all? Seeing Sarah disappear in the sea of faces might just be the way his mind explained his loss of consciousness to his imagination, freeing it from obligation so he could launch himself into fantasies of heroic action. He cast the thought from his mind. When he had tuned into the other creatures' dreams he had sensed their reluctance to end them. If this was his own dream then it was different. *He* was going to succeed.

The hull of the craft the Doctor had climbed upon sloped gently upwards. The Doctor walked towards the highest point, searching for a crack in the superstructure, a lock he might open with his screwdriver. There was none.

It was as he was deciding on his next course of action that he noted similar craft to the one he was standing on, closing in on either side. As they came closer he could see others behind them, all in a straight line, all moving at the same speed and height. Suddenly, when the craft were barely the length of a man apart, they accelerated rapidly. The Doctor threw himself down and pressed his palms flat on the smooth surface, trying desperately to get some kind of grip. Slowly, he felt himself slipping.

His palms were burning with friction as he pressed them harder and harder in an effort to slow his slide. It was no use. He was moving faster and faster towards the edge of the ship. He lifted his head to see where he would fall, and saw nothing except space. There was a sudden surge and he grabbed for the bolt. He was so high up that he could see the faint curve of the world below. He saw large dark patches among the pink coloured land mass. He clung on grimly to the bolt, his legs trailing behind him in the air. He wondered how he had the strength to cling on, how he was able to breathe so high up. He must be dreaming! He must! A sudden change of direction caused one hand to fall free and then everything went totally black.

When the Doctor recovered his senses, his first sensation was one of extreme cold. He was lying on the floor of some kind of massive supply ship, at least that's what he took it for. The place was dark and silent, and through the gloom he could just make out huge piles of spaceships similar to the one he had hitched a ride on, all stacked up neatly. There was no sound of any engines. He felt a stab of pain in his hand and looked down to see that it was bleeding.

As he looked at the drops of blood forming a tiny pool at his feet the Doctor heard a loud clanking sound, as if the building he was in had been gripped by machinery. The floor shuddered; there was a screeching sound and then it was quiet again.

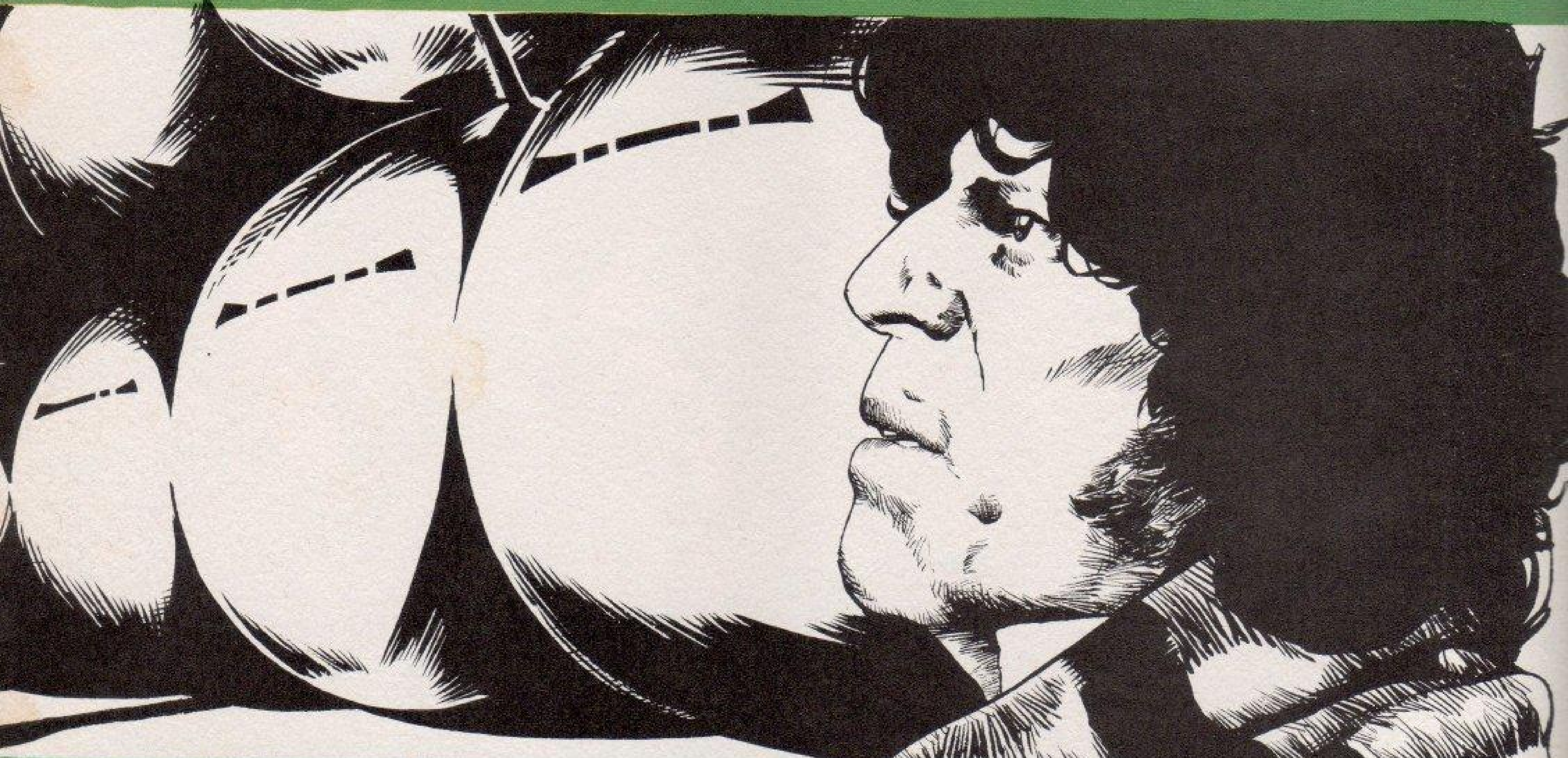
The Doctor walked round the vast chamber. From the shape of the walls he deduced it was a kind of mother ship that ferried the other ships over long distances and then released them inside the atmosphere of the planet. He must have fallen just as his ship entered the transporter. There was no sign of life of any kind. He continued walking through the gloom until at last he came to a crack in the wall. He felt around for a lock and found a black box on the wall. He opened it and flicked a switch. The door opened.

Wherever he was, the atmosphere was a lot thinner than that of the planet he had just left. The Doctor stepped out onto a shiny metal roadway that led to some buildings ahead. He could see the doors were open. As he walked along the roadway he noticed a planet, half in shadow, hanging in the sky like a severed fingernail. It was the planet he had just left, and he guessed he was on that planet's moon.

He went through the doorway of the building and was relieved to be back in a building constructed for beings of a similar size as himself. There were tables and chairs, carpets, viewing screens, pools, flowers and skeletons. There were skeletons in the chairs and beds, on the floor, and even two wrapped in embrace in a cupboard.

The Doctor made his way to a bank of instruments on the wall, in front of which a skeleton sat bolt upright in a chair, its bony fingers close to a series of buttons. As he reached out to touch one a crackling voice came out of a speaker above him. At first the language seemed strange to him, but as he listened it became clearer and clearer, until he was able to understand every word.

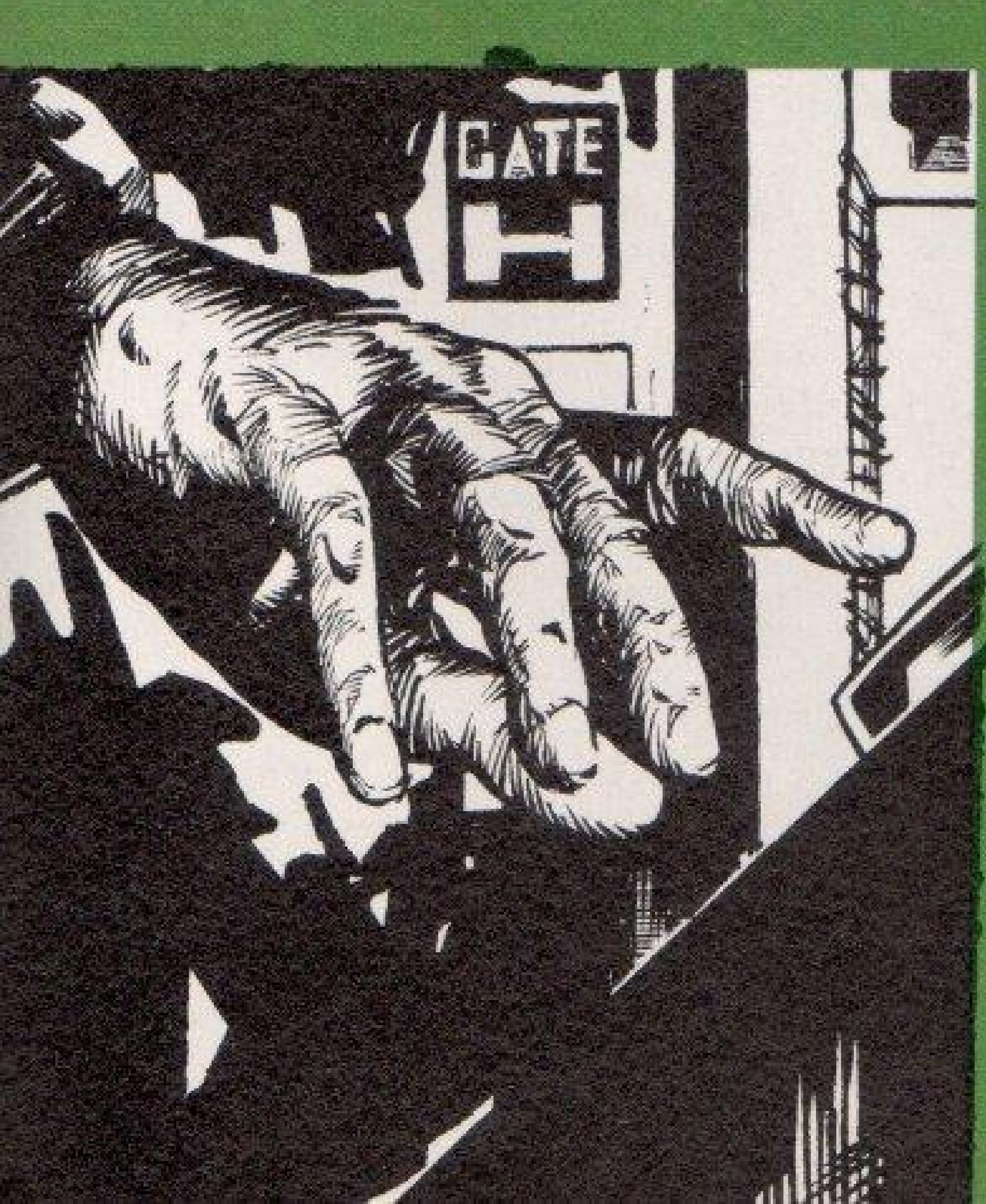
'Be you friend or foe that has broken the beam does not matter. That you are here is all. If you are friendly you will do as we ask and leave everything as it is. If you are foe, you will find no profit in meddling. We, the last of the free-speech



Kendorians, beg you to leave things as they are. So long as the gas supply is regular and affects everybody all will be well. For further information press the yellow button.'

The Doctor pressed the yellow button, a screen lit up, and in a fascinating mixture of stories and pictures, the Doctor learnt the story of Kendoria. He learned how the Kendorians had conquered disease, how they had slowed the rate of ageing to a virtual standstill. He learned too how Kendoria had become more and more overpopulated, how Kendorians would kill each other for a few minutes alone, would murder members of their family to savour any kind of privacy. But murder brought no release. From the deepest valleys to the highest hills, people were standing almost shoulder to shoulder. Skyscraper buildings built to create more space collapsed, underground shelters fell in. Eventually a group of scientists and government officials escaped to the moon in a spaceship, and were later joined by a small army of volunteers, the survivors of an airtight container that crash landed on the moon.

The survivors' stories persuaded the government in exile to act. Working hand in hand with the scientists, they developed a gas that enabled whoever breathed it to live entirely in their own dreams. The volunteer army built ships that would distribute the gas over the whole surface of the planet, moving unmanned along courses plotted by computers and guided by lasers. From what the Doctor could gather from the untidy ending of the broadcast, the gas they had invented was far more potent in the rarified atmosphere of the moon, and an explosion at one of the storage stations had released enough of it to kill everyone living there. The fully automatic ships had continued administering the gas to the planet ever since.



So the Doctor had found his answer to why the Kendorians lived as they did. But, obviously, something had gone wrong. He remembered the children running around, he remembered some of the Kendorians collapsing as they inhaled the gas. He remembered the dark patches of earth he had seen from the ship. Either the gas affected different people in different ways, or the dosages were inconsistent.

The Doctor checked out the buildings for further information. He found charts mapping the course of each spaceship and he discovered that the gassing trips were made once every month. For two days he worked, studying routes and figures, adjusting circuits and relays, re-setting the computer that plotted the courses of the ships. At last he was ready. From now on at least, the Kendorians would have a choice. But what about Sarah?

The Doctor knew she was in no immediate danger, but he also knew he had to find her soon. He went back over to the mothership, entered and walked back to the place where he had first come to. Around him the ships were stacked in piles of four, each one fitting snugly over the one underneath. Which one had he come on? They were all identical. His chances of picking the right one by guesswork were too slim to consider unless . . . he felt the wound on his hand and thought back to the pool of blood on the floor.

He walked round all the ships on the floor, checking the bolts at the back for any trace of blood. There was none. He checked the bolts on the ships on top of these ones. There was still no trace. Finally, after twelve hours, and halfway through the third layer of spaceships, his hand touched upon a rough black stain on the smooth metal of the bolt. It was blood.

The Doctor finished his preparations in the control buildings, and then, using a delayed action mechanism that would give him time to get back to the mothership, he switched on. Within an hour the mothership had taken off and he was climbing back to the ship he hoped would pass over the exact spot he had left Sarah. When he reached it he strapped himself tightly to the bolt with his scarf and waited several long, cold hours. Suddenly, just as he was beginning to feel a little warmer, the doors of the mothership flew open and he was speeding along through the bright sunshine, holding on for all he was worth. When the Doctor's ship reached an appropriate altitude it slowed, and then glided slowly down until it was almost touching the heads of the Kendorians below.

But this time no gas came from the air ducts of the craft. The Doctor stood up on the back and watched the faces passing under him. There were so many of them that it was impossible for him to find his bearings. If the ship didn't

answers

CELESTIAL SQUARES

1. Jupiter. 2. The asteroid belt. 3. Mercury. 4. Five. 5. Mercury. 6. Venus. 7. Mercury. 8. Earth. 9. Pluto. 10. Saturn. 11. Neptune. 12. Jupiter. 13. Pluto. 14. Mars. 15. Mercury.

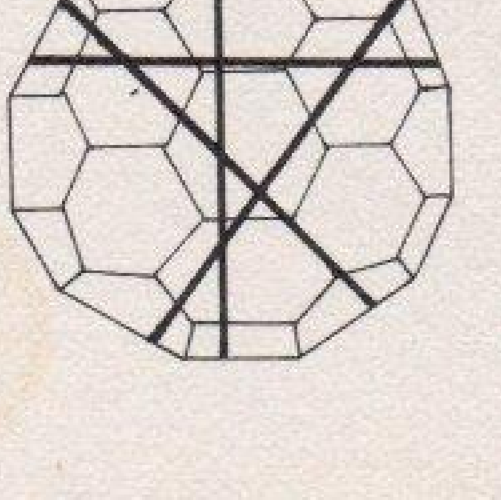
MYSTERY MESSAGE

To decode the message, trace off the second half, and place it under the first half. You will see that the marks now make complete letters, and the message reads as follows:
Doctor. You are in danger here. The Senate do not mean to let you leave this planet alive. They want the knowledge stored in your brain, and will kill you to get it. You must escape now.

SPACE NAMES

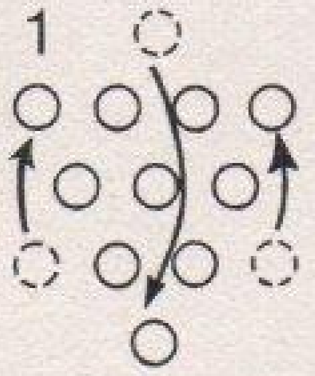
1. Sputnik. 2. Uranus. 3. Skylab. 4. Pluto. 5. A shooting star. 6. Tycho. 7. Mars. 8. Phobos and Deimos.

THE LIFE CRYSTAL



PROBLEMS, PROBLEMS!

1



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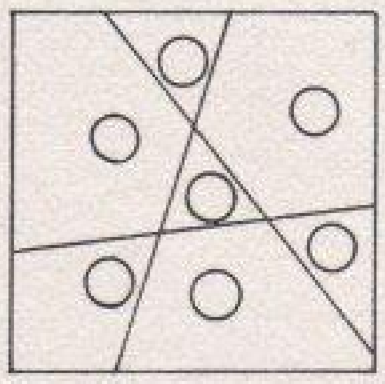

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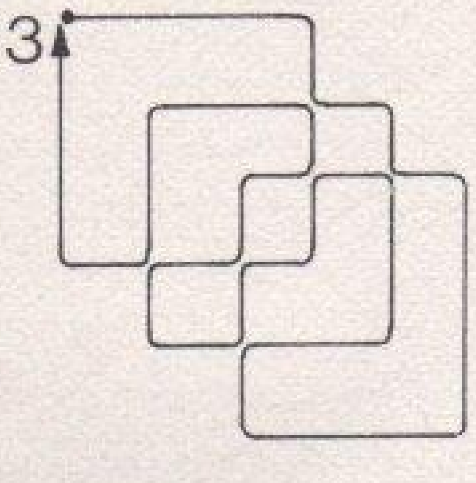


SPACEWORD

Across: 1. Saturn, 3. Mars, 7. & 12. Light years, 9. Rocket, 10. Radio, 14. Laika, 15. Tides, 17. Moon, 18. Uranus.

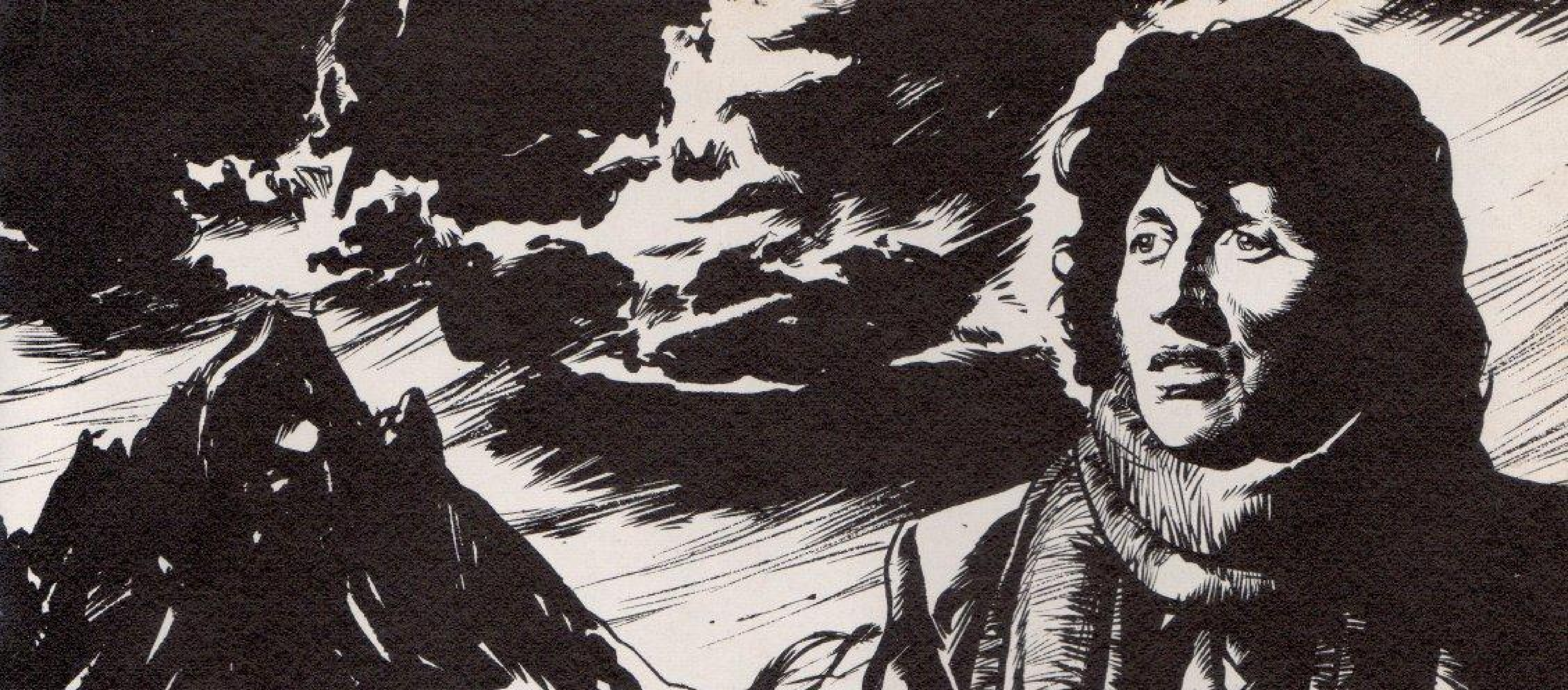
Down: 1. Solar system, 2. Retro, 4. Asteroid, 5. Sky, 6. Dock, 8. Goddard, 11. Tardis, 13. S.O.S., 14. Lunar, 16. U.N.

TRUE OR FALSE

1. False. Jupiter is the largest. 2. True. 3. False. There is no atmosphere in space to conduct sound. 4. False. Neil Armstrong was the first to leave the spacecraft – Aldrin followed. 5. True. Alexei Leonov performed the first space walk in March 1965. 6. False. 7. True. The temperature on Pluto almost reaches absolute zero. 8. False. Valentina Tereshkova was the first, and only woman astronaut. 9. False. It is a layer of radio-active particles trapped by earth's magnetic field.

SPOT THE DIFFERENCE

There are five differences between the two pictures: 1. The stripes on the Doctor's scarf are different; 2. A dial is missing from the central control; 3. The Doctor's shadow is missing; 4. The picture on the scanner screen is different; 5. There is a button missing on the Doctor's coat.



follow the exact route it had taken before he would have no chance of finding Sarah. As it was, he could still pass right over both Sarah and the Tardis and not notice either in the wealth of life beneath him.

But then, suddenly, there she was, standing just as he had left her. Even as the Doctor jumped down from the ship she was receding into the mass and, walking through the crowd, it took an hour to locate her and another hour to get her back to the Tardis. There he gave her a blood purifying pill and told her some of what had happened.

'And what will happen to the Kendorians now?' she asked.

'Those that want to live under the gas will still be able to do so. The others are also free to do as they wish. Free to work together, to build, to guard against the future.'

'Or free to squabble and murder one another.'

'Perhaps, but I doubt it. Their children survived by staying together. Maybe they can learn from that.'

'But what about the overcrowding?'

'It is not so severe as it was before. Over the years some of the machines developed faults, some people were gassed to death – others were killed by disease brought in by germs from the moon. It was our misfortune to land on one of the more densely populated parts of the planet.'

'Densely populated? I've had more room in a rush hour lift! What will happen to the spaceships?'

'I programmed them to land in the unoccupied areas I could observe through telescopes on the moon. There is enough gas in them for the Kendorians that want it. When the gas wears off, they will be able to choose – that's the main thing.'

'And the children? How come they weren't affected by the gas?'

'I don't know. Maybe they knew the right places to hide. Maybe they grew immune to it. At least they will be able to enjoy a more normal environment.'

'I'm glad about that,' said Sarah, stretching out and yawning, 'but I must confess I had the most wonderful dream. How is it you didn't get gassed?'

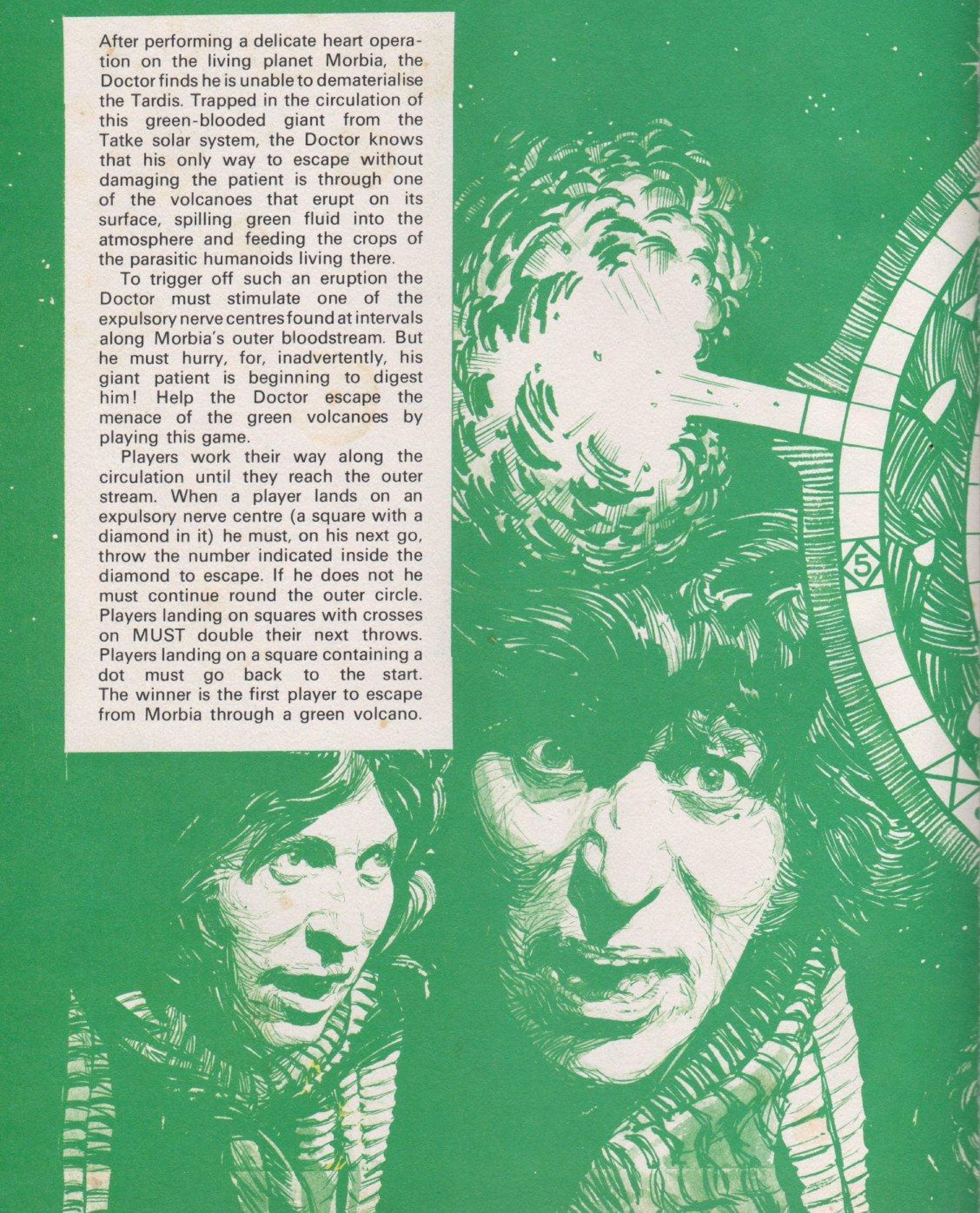
'I don't know,' smiled the Doctor. 'Maybe I did. Maybe it all just went on in my mind. Maybe this is *my* dream.'

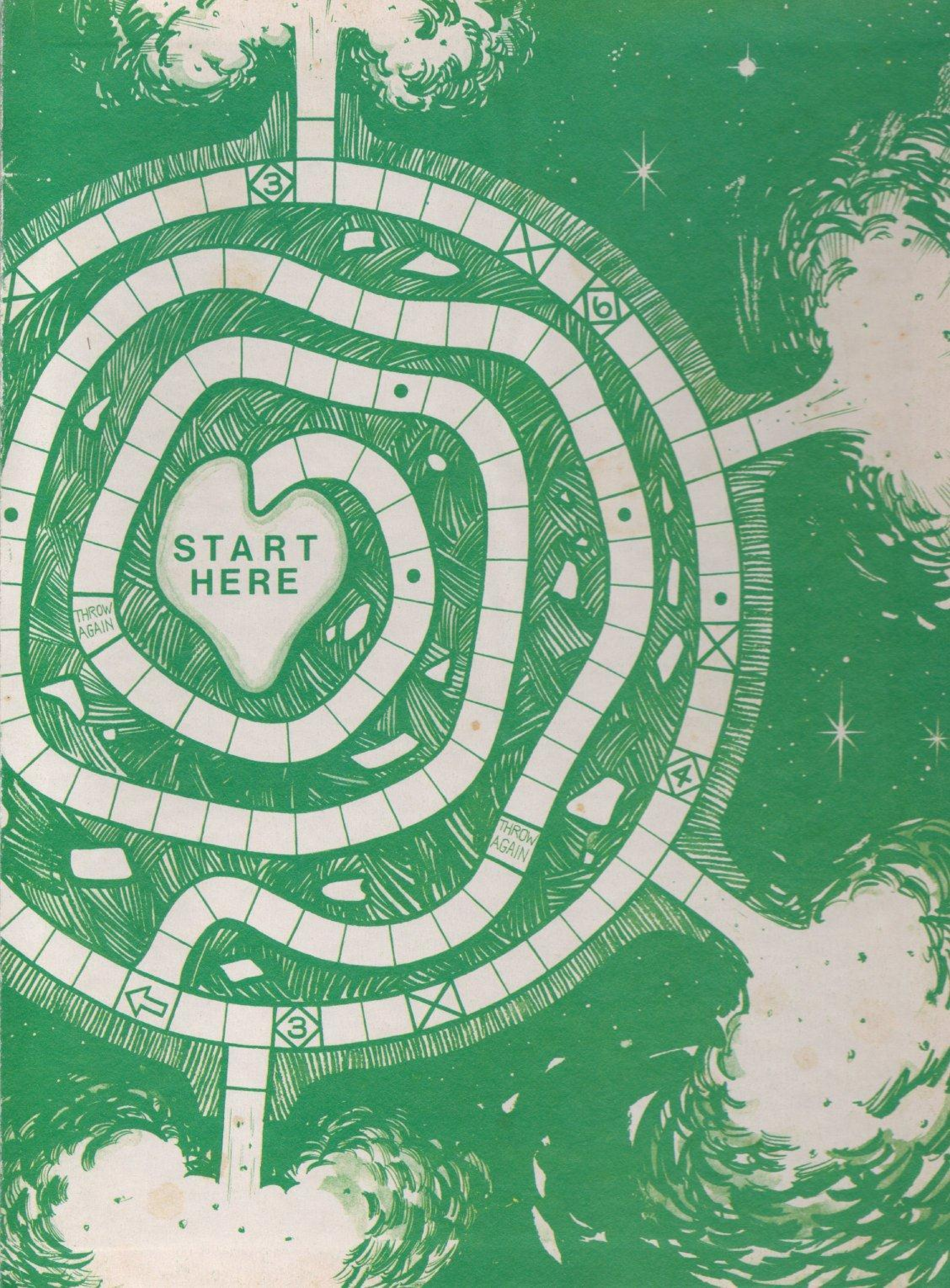
Escape from the Green Volcano

After performing a delicate heart operation on the living planet Morbia, the Doctor finds he is unable to dematerialise the Tardis. Trapped in the circulation of this green-blooded giant from the Tatke solar system, the Doctor knows that his only way to escape without damaging the patient is through one of the volcanoes that erupt on its surface, spilling green fluid into the atmosphere and feeding the crops of the parasitic humanoids living there.

To trigger off such an eruption the Doctor must stimulate one of the expulsory nerve centres found at intervals along Morbia's outer bloodstream. But he must hurry, for, inadvertently, his giant patient is beginning to digest him! Help the Doctor escape the menace of the green volcanoes by playing this game.

Players work their way along the circulation until they reach the outer stream. When a player lands on an expulsory nerve centre (a square with a diamond in it) he must, on his next go, throw the number indicated inside the diamond to escape. If he does not he must continue round the outer circle. Players landing on squares with crosses on MUST double their next throws. Players landing on a square containing a dot must go back to the start. The winner is the first player to escape from Morbia through a green volcano.




START HERE
THROW AGAIN
THROW AGAIN
3
6
4
3